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ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

Model Regulations on Enterprise Production Fund Issued

18200081a Moscow EKONOMICHESKAYA GAZETA
in Russian No4, Jan 88 p 17

[Article: "Production Development Fund"]

[Text] As already reported in EKONOMICHESKAYA GAZETA (Issue No. 43 for 1987), the committee for improving administration, planning and the economic mechanism has approved a number of standard statutes for enterprises (associations) and organizations which convert over to complete cost accounting and self-financing during the 1988-1990 period. These statutes were developed based upon the USSR law governing a state enterprise (association). In response to numerous requests by readers, they are being published in the weekly.

The standard statutes for the normative method for profit distribution and for the formation of a wage fund have already been published in EKONOMICHESKAYA GAZETA (Issues Nos. 50 and 52 for 1987). The standard statute on the system for the formation and use during the 1988-1990 period of a fund for the development of production, science and engineering, for enterprises, associations and organizations which have converted over to complete cost accounting and self-financing, as approved by USSR Gosplan, is printed in this issue.

The present standard statute was developed based upon the USSR law governing a state enterprise (association) and it calls for the following system, during the 1988-1990 period, for the formation and use of a fund for the development of production, science and engineering for enterprises, associations and organizations which have converted over to complete cost accounting and self-financing (1).

1. System for Computing Stable Norms for the Formation of a Fund for the Development of Production, Science and Engineering.

1. A fund for the development of production, science and engineering is formed at an enterprise by means of:

— withholdings from the profit remaining at the disposal of enterprises (income), in accordance with norms established in percentages of it;

— amortization deductions intended for the complete restoration of fixed capital, in accordance with norms established in percentages of these amortization deductions.

2. In order to compute stable norms for the formation of a fund for the development of production, science and engineering by years, a determination is made as to the

volume of capital investments subject to financing using the fund for the development of production, science and engineering. This volume appears as the difference between the overall capital investment limit, taken into account in the computations for the five-year plan for an enterprise for this period, and the volume of capital investments for objects of the enterprise, included in the list of construction projects and objects carried out using state centralized capital investments.

Thereafter, computations are carried out for other expenditures called for in the five-year plan and financed earlier by means of budgetary profit and funds, included in the fund for the development of production, science and engineering when converting over to complete cost accounting and self-financing. The list of expenditures included in the fund for the development of production, science and engineering for computing the norms for the formation of this fund is furnished in Appendix No. 1 to this present standard statute.

The total amount of the mentioned capital investments and expenditures forms the overall amount of the fund for the development of production, science and engineering, accepted for computing the norms.

After computing the overall amount of the fund for the development of production, science and engineering, the sources for its formation are determined: profit, amortization deductions intended for the complete restoration of fixed capital, earnings from the sale of unused property and other planned sources. In the process, a portion of the fund for the development of production, science and engineering, formed by means of profit, must as a rule constitute not less than 20 percent of the overall amount of this fund, computed in conformity with the present point.

The amounts for the norms for the formation of the fund for the development of production, science and engineering are computed by dividing those portions of the fund formed by means of deductions from profit and amortization deductions respectively by the amount of profit remaining at the disposal of the enterprises and by the total amount of amortization deductions intended for the complete restoration of fixed capital.

3. In order to ensure stable operating conditions for the enterprises, the norms for withholdings for the fund for the development of production, science and engineering, from the profits remaining at the disposal of the enterprises, are averaged out by years of the five-year plan.

An example of averaged out norms is furnished in Appendix No. 2 to the present model statute.

4. Stable norms for the formation of the fund for the development of production, science and engineering of enterprises are approved by the ministry (department) and state production association by agreement with the appropriate trade union committee.

When approving the mentioned norms, every attempt should be made to achieve conformity between the amounts of the fund for the development of production, science and engineering of enterprises and the amounts of this fund for the ministry (department) or state production association on the whole (with the centralized fund being taken into account).

5. Resources of the centralized fund for developing the production, science and engineering of a ministry (department) or state production association can be employed for the formation of a fund for the development of production, science and engineering of planned-unprofitable and low profitability enterprises.

II. System for the Formation of a Fund for the Development of Production, Science and Engineering.

6. The absolute amounts of a fund for the development of production, science and engineering are determined by enterprises in a plan and actually by multiplying the norms determined in conformity with Point 2 of the present standard statute by the values for the appropriate fund-forming indicators, calculated as an increasing total since the beginning of the year.

The fund for the development of production, science and engineering is determined quarterly on the basis of approved norms.

The amounts for the fund for the development of production, science and engineering, calculated in this manner, increase by the total amount of earnings realized from the sale of unused property and rental payments (providing the rental of property is not the principal activity) obtained by enterprises from the centralized fund for developing the production, science and engineering of a ministry (department) or state production association (2), and also other withholdings called for by existing legislation.

7. Construction-installation organizations, when determining the amounts for a fund for the development of production, science and engineering also take into account:

— withholdings from a savings in resources obtained as a result of a reduction in the estimated cost of construction compared to the contractual price (construction projects for which the total amount of the savings was known at the moment that the draft plan was prepared) and used for developing the production base and for covering the raised production expenses of organizations that are associated with the introduction of progressive planning solutions;

— funds expected to be obtained from a client for a reduction in the schedules for placing production capabilities in operation, compared to the approved norms for construction projects for which the amount of these funds was known at the moment that the draft plan was prepared;

— funds turned over to a contractor by a client for compensating for the additional expenditures required for developing the production base, in connection with the organization of construction in newly developed regions and the carrying out of operations at high rates;

— funds for the construction of temporary buildings and installations as called for in the estimates.

III. System for Utilizing the Resources of a Fund for the Development of Production, Science and Engineering.

8. The resources in a fund for the development of production, science and engineering are expended in accordance with an estimate. A draft estimate for an expenditure is raised for discussion by a labor collective of an enterprise and following such discussion it is approved by a joint decision handed down by the administration and the council of the labor collective and the trade union committee and added to the collective agreement. The administration and trade union committee informs the labor collective regarding the execution of the mentioned estimate.

9. In particular, the resources of a fund for the development of production, science and engineering can be used as follows:

a) for financing expenditures for the technical re-equipping, modernization and expansion of existing production operations; the construction of new installations for the production bases of construction organizations;

b) for financing expenditures for the preparation and development: of new and modernized products, designs and materials; the production of experimental models; the construction of new types of buildings and installations; progressive technological processes;

c) for the carrying out of scientific-research, experimental-design and planning work (including the acquisition of licenses) and for financing the expenditures required for acquiring the equipment, instruments and other commodity-material values required for this work;

d) for providing compensation for the raised expenditures for the production of new products during their developmental period;

e) for financing growth in internal working capital and also for providing compensation for shortages in such capital;

f) for financing expenditures for participation in the construction, modernization, repair and maintenance of local highways, in the amounts called for in the 27 November 1958 Ukase of the Presidium of the USSR Supreme Soviet (in the editing of the 14 April 1980 Ukase) and in the legislation adopted by the union republics for its development;

g) for the organization and development of subsidiary agriculture.

The mentioned resources can be used for acquiring agricultural machines, livestock, poultry, seed and other items and also for carrying out the required construction-installation work;

h) for the creation and expansion of capabilities for the production of consumer goods and for providing services for the population;

i) for liquidating long-term bank credits extended to an enterprise, which in conformity with existing legislation are liquidated using resources from the fund for developing production, science and engineering and also for making interest payments for these loans;

j) for partial reimbursement for the expenses borne for the training of young specialists.

k) for implementing nature conservation measures;

l) for the construction of temporary buildings and installations, as called for in the estimates (for construction organizations);

m) for the acquisition of machines, mechanisms and equipment not included in the estimates for construction projects;

n) for covering the losses being sustained by an enterprise in connection with a transfer of property to other enterprises, the sale or writing off of property and also for covering expenditures for fixed capital turned over on a rental basis;

o) to the fund for social development for the construction of housing (in the amounts established by legislation);

p) for the financing of other production requirements.

10. By agreement with the labor collectives, enterprises are authorized to transfer a portion of their fund for the development of production, science and engineering to other enterprises or to the executive committees of local soviets of worker's deputies, for financing the following:

— work which is carried out jointly and which is associated with the re-equipping and modernization of production, an acceleration in scientific-technical

progress, an improvement in the quality of output, the development of consumer goods production and the furnishing of services to the population;

— inter-branch production operations, computer centers for collective use and scientific, planning, design, repair, construction, trade and other joint enterprises and associations created in the established manner;

— the construction and operation of installations of a production infra-structure, subsidiary farms, nature conservation installations and other projects of a production nature for joint use;

— organizing the training of specialists and the creation (jointly with educational institutions) of production training enterprises.

11. Utilizing its own resources and operating on a contractual basis, an enterprise develops its planning-estimates documentation for carrying out work concerned with the technical re-equipping, modernization and expansion of existing production operations; it approves the planning-estimates documentation and title lists for objects of a production nature, the construction of which is carried out using resources from the fund for the development of production, science and engineering and bank credits.

An enterprise which employs its own resources for carrying out work concerned with the technical re-equipping, modernization and expansion of existing production operations, using the economic method, independently establishes the schedules for the preparation and issuing of planning-estimates documentation, depending upon the specific production conditions.

12. The resources in the fund for developing production, science and engineering are used by enterprises for capital construction and they are fully taken into account by the ministry in the draft plan for capital investments and they are ensured on a priority basis by the limits for contractual and planning-research work in the amounts presented by the enterprises (taking into account the work volumes carried out using the economic method).

In the ministry's plans, the volumes for capital investments and for construction-installation and contractual work and also the placing in operation of fixed capital, production capabilities and installations, using resources from the fund for the development of production, science and engineering, are taken into account in conformity with recommendations by the enterprises.

13. Payments from the fund for the development of production, science and engineering for equipment acquired as replacements for worn out equipment and the expenditures for installing such equipment are carried out based upon the funds available in an enterprise account in a financing bank.

14. In the event there are insufficient resources in the fund for the development of production, science and engineering, enterprises may make use of bank credits.

15. Resources in the fund for the development of production, science and engineering which accumulated during the current year over and above the amounts defined in the plan and also resources which were not utilized in past years can be expended for capital construction purposes over and above the volumes called for in the annual plans approved by an enterprise, to the extent that they are able to find the material resources required for this purpose. The mentioned funds are ensured by limits and resources in priority order during subsequent planned periods.

16. The cost of industrial type work that is associated with the development and introduction of new equipment, paid for using resources from the fund for the development of production, science and engineering at an enterprise, is taken into account in the volumes for the production and sale of products. The non-fulfillment of state orders concerned with mastering the production of new items of equipment, financed by means of the mentioned resources, is taken into account when evaluating the fulfillment of contractual obligations in the matter of product deliveries.

17. By agreement with USSR Gosplan, USSR Minfin [Ministry of Finances] and the VTsSPS [All-Union Central Trade Union Council], the ministry may define the peculiarities of use of the present standard statute resulting from the branch's specific operations.

Appendix No. 1

List of expenditures included in the fund for the development of production, science and engineering, for computing the norm for the formation of this fund.

Capital investments which are subject to financing using resources in the fund for the development of production, science and engineering at enterprises (determined in the manner set forth in Point 2 of the present standard statute).

Funds called for in the financial plan and also budgetary appropriations for planned expenditures prior to the conversion of an enterprise over to complete cost accounting:

— growth in internal working capital;

— an enterprise's fund (not less than 20 percent of an enterprise's fund is added to the fund for the development of production, science and engineering);

— that part of the fund for consumer goods used for expanding production and improving the quality of products (35 percent);

— a single fund for the development of science and engineering (excluding resources intended for the issuing of bonuses) in amounts designated by the ministry;

— other funds;

— withholdings for road work in the amounts established in the 27 November 1958 Ukase of the USSR Supreme Soviet (in editing of the 14 April 1980 Ukase) and in union republic legislation adopted in behalf of its development;

— operational expenses (with the exception of expenditures financed from the budget);

— funds for the liquidation of loans obtained for the purpose of increasing internal working capital and for paying the interest required for such loans;

— funds for the liquidation of long-term bank loans obtained for capital investments (particularly for production construction) and for the formation of the principal herd and for paying the interest required for such loans;

— profit remaining at the disposal of a farm (particularly profit to be used in conformity with existing legislation for the development of production, science and engineering);

— withholdings for the fund for providing reimbursement for losses caused by discounts for goods;

— expenses for personnel training;

— partial reimbursement for expenditures for the training of young specialists (for enterprises recently placed in operation);

— the amounts by which the wholesale prices for consumer goods exceeded the retail prices;

— other expenses (particularly profit used in conformity with existing legislation for the purpose of covering expenditures for production, science and engineering).

Appendix No. 2

An example of a computation of the average norms for withholdings for the fund for the development of production, science and engineering and also the profit remaining at the disposal of enterprises (surplus profit).

Example

	1988	1989	1990	Total for 3 years
Material incentive fund for five-year plan, thousands of rubles	200	210	230	640
Social development fund for five-year plan, thousands of rubles	100	110	130	340
Fund for development of production, science and engineering, thousands of rubles	200	300	400	900
Profit remaining at disposal of enterprises according to five-year plan computations, thousands of rubles	500	620	760	1880
Average norm for formation of material incentive fund, percentages (640 X 100 : 1880)	34.04	34.04	34.04	
Average Norm for formation of social development fund, percentages (340 X 100 : 1880)	18.09	18.09	18.09	
Average norm for formation of fund for development of production, science and engineering, percentages (900 X 100 : 1880)	47.87	47.87	47.87	
Profit remaining at disposal of enterprises, computed taking into account the average norm for the material incentive fund, thousands of rubles	587.6	616.8	675.6	1880
587.6 - 200 X 100 : 34.04				
616.8 - 210 X 100 : 34.04				
675.6 - 230 X 100 : 34.04				
Social development fund, computed taking into account the average norm, thousands of rubles	106.2	111.5	122.2	340
Fund for development of production, science and engineering, with average norm taken into account, thousands of rubles	281.3	295.3	323.4	900

In order to determine the average norms and surplus profit, a determination is made as to the total value for each of the three economic stimulation funds for the 1988-1990 period. Following this, a total is obtained for all three funds for the three year period and in this manner the total amount of profit remaining at the disposal of the enterprises for the 1988-1990 period is determined.

In order to determine the average norms for withholdings from profit for the economic stimulation funds, the total value for each of the three funds for the three years is divided by the amount of profit remaining at the disposal of the enterprises for this period.

Based upon the overall value of the material incentive fund called for in the five-year plan for these years and the average norms for withholdings for the material incentive fund, a determination is made as to the total amount of profit remaining at the disposal of the enterprises for the 1988-1990 period (by years).

The fund for social development and the fund for the development of production, science and engineering should be computed taking into account the average norms and the profit remaining at the disposal of the enterprises. In the process, if the computed amounts for each of these funds turn out to be less than the figures expected for the respective years in the five-year plan, the difference is compensated by means of bank credits.

The ministries (departments) can employ other methods for averaging out the mentioned norms. In the process, the amounts in the material incentive fund, the fund for social development and the fund for the development of production, science and engineering must correspond to their computed values as included in the five-year plan and the overall values for these funds for each subsequent year must as a rule be greater than the values for the preceding year.

Footnotes

1. Subsequently referred to as "enterprise."
2. Or another similar centralized fund of a ministry (department) or state production association.

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Economist Claims That New GNP Indicators Distort Growth Figures

18200065 Moscow EKONOMICHESKAYA GAZETA in Russian No 3 Jan 88 p 14

[Article by M. Syunyayev, senior scientific worker of the Institute of Economics and Forecasting of Scientific and Technical Progress of the USSR Academy of Sciences, candidate of economics sciences: "Economic Growth Needs New Measuring Devices"]

[Text] EKONOMICHESKAYA GAZETA published last year in its issues Nos 31 and 42 the articles, "How to Measure Economic Growth," and "Assessment of the

"Gross National Product," which posed a number of questions about improving methods for analyzing and evaluating the rate of economic development in an era of structural restructuring of the economy and of changes in overall economic proportions.

The article published below expresses still another point of view on what should be the indicators of the dynamics of social production.

Here is just one example of the importance of a correct assessment of structural shifts. The restructuring that is going on in the country has already been reflected in the indicators for the dynamics of the largest branches of the national economy, which point to a rise in the pace of growth of the economy as a whole in the last two years. Let us examine that time segment which, in the article, "Assessment of the Gross National Product," refined only periods of substantial differences in the rate of economic development.

**Rates of Growth of Production Output in 1971-1986
(average per year, in percent)**

	1971-1978	1979-1984	1985-1986
Industry	6.5	3.7	4.3
Agriculture	2.0	0.8	2.6
Volume of construction and installing work	4.3	1.3	4.5

It is obvious, at the same time, that a profound restructuring of the social and economic mechanism inevitably will affect the growth of some quantitative indicators. Let us name just the financial consequences of measures for restricting the production and sale of winery and distillery items. In 1986 alone, sales of alcoholic beverages to the public were reduced by 37 percent. Such a large-scale process cannot help but be reflected in the dynamics of retail turnover, state-budget receipts and, accordingly, the generalizing indicators—national income produced and used, because, until recently, a sixth of the sales of commodities to the populace went to alcoholic items. As a result, indicators computed by the traditional methods would indicate that the rate of growth of the national economy as a whole had declined in two recent years. The amount of national income produced increased by only 1.6 percent in 1985 and by 1.5 percent in 1986 in the actually existing prices.

In other words, against a background of an acceleration of the dynamics of production in branches of the national economy, a false impression was created that growth of the economy as a whole had slowed. Here is a contradiction, which testifies to an imperfection in the measurers of economic growth that are being used.

The articles of Academician S. Shatalin and Candidate of Economic Sciences G. Zoteev (Nos 31 and 42, 1987) were founded on the necessity for using the gross national product indicator for measuring the rate of economic growth. This indicator is accepted as a basic measuring rod of economic growth in the overwhelming majority of the world's countries. Sooner or later, in our view, domestic statistics also will adopt it. I would like to make a number of comments on the computational methodology proposed in the article, "Assessment of the Gross National Product." The author has taken the route of constructing his own indices for growth of various parts of the fund for the consumption of commodities and services. This step is easy to accept. In the first place, the system of prices that prevails in the national economy hinders measurement of the growth of production based on them. A possible way out of this situation is the forming of an arbitrary commodity-turnover structure, which "normalizes" distortions in the retail pricing system. In the second place, the rates of growth of various elements of the consumption fund, which are determined on a costing basis, practically inevitably contain a substantial inflationary component. The author ignores this inconvenience with help from the fact that the base structure of the consumption fund weighs not the cost but the in-kind indicators of the consumption of various products. He treats services similarly, taking the dynamics of the housing inventory as the rate of growth, for example, of the housing activity's services.

These methodical procedures are completely permissible but not indisputable. The problem is that the indicator which is obtained as a total cannot, in our opinion, be called the gross national product. This is an entirely a different indicator. There are two premises for such a conclusion.

First, the gross national product (unlike national income) is measured in prices of commodities actually sold to the customer (in the assessment of the dynamics—in actual prices for the base year). The indicator obtained in the article is constructed on the basis of arbitrary prices.

Second, a mandatory element of the gross national product is the export-import balance. This factor was not considered in the article, so the indicator obtained reflects the dynamics not of production but of consumption of a product, which varies extremely where there are a large volume and sharp changes in the rate of growth of the USSR's internal trade turnover.

It is desirable to continue discussion of the methodological questions of computing the gross national product. The indicator of national income, computed in the producers' prices, can be used as an adequate gage of the rate of national economic development, in our opinion. We are referring to prices that are reduced below the final consumption prices by the value of the excise portion of the turnover tax and income from foreign trade and increased by the size of the subsidy from the state budget and from other sources.

The fact is that commodities sold at prices far from their production costs comprise a substantial share of the social product. On the one hand, prices for winery, distillery and tobacco articles, textiles, jewelry and cars include the turnover tax and exceed by far the costs for producing them. On the other hand, prices for meat and dairy products, potatoes, threshed grains and legumes, and a broad range of children's commodities are set by the state at a level that does not cover production outlays.

Under such circumstances, the determination of national income and the populace's real income in final-consumption prices, as it is being done today, leads to a paradoxical situation. The vast expenditures and forces of the socialist state that go to increasing the production of meat and dairy products exert an extremely insignificant influence on the dynamics of these indicators, since the consumption of milk and meat is computed in prices 2.5-fold lower than what is spent on their production. At the same time, an increase in the production of such socially harmful products as alcoholic beverages or tobacco products increases appreciably the growth of indicators of social production and the people's welfare, since the prices for them by far exceed the outlays. Therefore, in reducing the share of taxable products (the same as for an increase in the share of subsidized commodities), the false impression arises that there has been a reduction in the rate of growth of national income and of real income for the populace.

Such changes in the dynamics of generalizing indicators of economic development and of the level of living conditions reflect not so much an actual reduction in production or a drop in people's welfare so much as a weakening of the economy's redistribution processes. At the same time, these losses are fully reflected in the magnitude of national income, which is determined in accordance with existing methodologies (but then, also in the magnitude of the gross national product), changing the actual dynamics of social production.

Distortion of the pace of development of social production is linked also with the methodologies for considering the output of foreign trade in the generalizing indicators. The contribution of foreign trade to economic growth often is equated to the share of growth of the output of foreign trade (the balance of imports from foreign-trade operations in relation to the balanced turnover) in growth of the national income produced. However, where there is equality of prices on the world and domestic markets, this element of national income would be equal to zero. The economic nature of "the output" of foreign trade is basically identical with the difference between the turnover tax and the state subsidy of food products. It is a result of levying a customs tax on imported commodities and of supporting low domestic prices for exportable fuel and raw-material commodities. Where there are sharp drops in the dynamics of foreign-trade turnover, this element of national income introduces a great distortion into the indicators for growth of social production.

All these problems are removed, in our view, by using the indicator of national income, which is measured in the producers' prices, that is, in prices that do not include the turnover tax or state subsidies and reflect the results of production proper, free of the elements of redistribution. This is especially appreciable when analyzing the dynamics of the national income produced for a lengthy time period. The calculations we have made cover the period 1966-1986.

**Rates of Growth of National Income of the USSR
(average per year, in percent)**

	1966-1970	1971-1975	1976-1980	1981-1984	1985-1986 (estimated)
In final consumption prices	7.8	5.7	4.3	3.7	1.5
In producers' prices	7.8	5.3	3.4	3.0	4.5

It is characteristic that the rate of growth of national income during the Eighth Five-Year Plan does not depend upon the accounting method. This is explained by the fact that the high rates of growth of national income in 1966-1970 were the direct consequence of the dynamic development of industrial, agricultural and construction production.

During the Ninth and, especially, the Tenth Five-Year Plan, against the background of a slowing of the dynamics of branches of the national economy, a burgeoning growth in turnover tax receipts, caused mainly by an increase in the production of alcoholic beverages, was noted. Foreign-trade turnover expanded vigorously. This resulted not so much from a growing export potential of our country as a sharp increase in oil prices on the world market—more than 16-fold during the 1972-1982 period. As a consequence of this, the rate of growth in national income, which is measured in final consumption prices, lost contact appreciably with the actual dynamics of social production.

And, finally, there is the striking difference in the rate of change computed for the various price bases that was characteristic for 1985-1986, the initial period of restructuring. While there was an actual acceleration in the growth of social production, the sharp drop in level of the indirect taxes on the populace that have been associated mainly with a reduction in the production of alcoholic beverages led to a failure of the usual indicators of economic development to "cover" the acceleration.

Domestic statistics widely use producer prices for measuring economic processes. It is in these prices that the output of industry and of other branches of the national economy are computed. The use of various pricing systems for measuring growth of production in the various branches and for the national economy as a whole engenders noncomparability thereof and a significant divergence between the national-economic and the

branch indicators of production dynamics. The introduction into reporting and planning practice of the national-income indicator, which is measured in producer prices, will yield, in our opinion, a logical noncontradictory system of indicators of the pace of development of the national economy.

The principle of dual prices (the computation of national income in producer prices, and of gross national product in final consumption prices) has been long used in the national accounting practice of the U.S. and the economic services of the United Nations. Such a practice is considered correct from the theoretical point of view and does not engender any methodological problems. In particular, the requirements for using artificial prices, "purged" of taxes and subsidies for each type of product, does not arise, since financial statistical data suffice for converting from one of these indicators to another.

There is an opinion that conversion to computing national income in producer prices is complicated by the problem of singling out the excise portion of the turnover tax. The fact is that in some cases this form of taxation carries out the functions of regulating the level of profitability and of accounting in the price for high-quality of output. In our view, the problem is not that complicated, since the nonexcise portion of the turnover tax (that is, that part of the monetary accumulation of the national economy which, at the normal level of profitability, should be entered as profit but for various reasons is realized in the form of the turnover tax) is very insignificant. In the process of regularizing the system of prices, the magnitude of this part will be reduced to the zero level.

The conversion to measurement of the pace of economic growth on the basis of just the gross national product, given the prevailing distortions in the pricing system, cannot, in our view, give the expected results. Indeed, this indicator inherits the basic inadequacy of the measuring rod that is now used—high dependence upon the nature of redistribution processes in the national economy. The indicator of national income, "purged" of indirect taxes and subsidies, is free from this inadequacy and has been confirmed by many years of world experience in computing it.

It is proposed that it is time to include it among the indicators of the country's economic and social development, along with the indicator of gross national output.

11409

State Acceptance Guidance on Work Relations, Paperwork Reduction
18200063 Moscow STANDARTY I KACHESTVO in Russian No 12, Dec 87 pp 8-11

[Article by B.P. Chumakov, first deputy chief of the Main Administration of State Acceptance of USSR Gosstandart: "Experience With State Acceptance: Some Conclusions and Recommendations"; first three paragraphs are editors' note]

[Text] In a few days 1,512 state acceptance departments will complete their 1st year of operation, and 735 new ones will go into operation.

Astute use of the experience already gained is an important condition for effective improvement of the operation of the components of extradepartmental control that are now in operation and for the rapid evolution of those created recently. But this is not a simple matter by any means, since different state acceptance departments operate in different ways at different enterprises and possess differing experience. That is why the editors called upon one of the responsible officials of USSR Gosstandart to help state acceptance managers to get their bearings in all the diversity of that experience by singling out what is most important and fundamental in it.

The editors hope that his advice, which is published below, will be useful both for those state acceptance departments that have been operating for a long time and those which are only beginning their work.

What Is Needed Is Interaction, Not Antagonism

The experience in operation of extradepartmental monitoring agencies in the year that has passed since their activity began offers convincing indication that their effectiveness depends above all on how relations take shape between the director of state acceptance and the top manager of the enterprise. If these relations are structured on the basis of a clear understanding of their common responsibility for successful performance of their common tasks of guaranteeing a radical improvement of product quality, then the joint effort of enterprise collectives and state acceptance is effective and efficient as a rule. Otherwise joint effort is actually replaced by antagonism, which cannot lead anywhere.

It needs to be especially emphasized that an understanding of the joint nature of the tasks of raising product quality and of responsibility for their successful performance is a mandatory condition of effective cooperation of the directors of the enterprise and of state acceptance. Only in this case can the enterprise director relate to the director of state acceptance as a protector of the interests of the state who heads the department capable not only of posing problems which at times are difficult and complicated for the enterprise, but also of extending competent and effective practical aid in solving them. Only in this case will the director of state acceptance be able to count on understanding and support from the director of the enterprise. And it is he who sets the tone and character of the attitude toward state acceptance both of collectives and also of individual personnel of practically all the enterprise's staff departments and subdivisions, and it depends largely on him whether they will take the requirements of state acceptance into account and will cooperate with it.

Thus the directors of state acceptance and the enterprise must seek out and achieve mutual understanding on a principled and businesslike basis. The party organization (secretary of the party committee) should also play an important role in this.

Two very instructive examples can be cited to confirm what we have said.

At the Lyubertsy "Zavod imeni Ukhomskiy" PO mutual understanding between the directors of the enterprise and state acceptance was not achieved immediately. For instance, because a sufficiently responsible attitude was not taken toward preparation of the enterprise for operation under the conditions of the work of state acceptance, the general director, the chief engineer, and the chief of the OTK were removed from their positions. When the new management came, the attitude toward state acceptance changed radically. Because the enterprise director and director of state acceptance are at one in their understanding of the tasks facing the association and of how they should be performed, businesslike cooperation that affords considerable success has been organized in every respect between the collective of the enterprise and state acceptance. For instance, over the first 9 months of this year there have been half as many claims filed against the products manufactured by the association and a substantial reduction in the costs of repairs under warranty.

The picture is quite the opposite at the Mytishchi Machinebuilding Plant, where personal contact between the manager of the enterprise and the director of state acceptance is frequently replaced by official correspondence. But the paper cycle cannot be the businesslike basis of effective interaction between the enterprise and state acceptance. That is why the numerous tasks of improving the quality of the product produced by the plant are being performed with difficulty and painfully.

Selection of the Main Direction

Businesslike cooperation with the management of the enterprise can hardly be worthwhile if it is predicated on the compliance of the director of state acceptance, and it is hardly possible at all if compliance is replaced by petty and pedantic exactingness. So that these extremes are precluded, there is a need to ascertain the main direction of this effort in each specific stage of solving the problem of the quality of products being produced.

The very ability to select the main direction of the effort is very important for any manager. For the director of state acceptance this is especially important, since by exercising the immense rights extended to him, he can have an essential influence on what tasks, in what manner and in what sequence, will be performed by the enterprise's collective.

Those who say that there are no trifles in the matter of guaranteeing high product quality are right in principle. But experience shows that as a rule success is not achieved at all once in taking everything into account and guaranteeing everything. Out of the entire interrelated group of tasks those have to be chosen whose performance is needed immediately, so that maximum effort is concentrated on them. Since a uniform methodology for making this choice has not yet taken shape, every director of state acceptance must be able to take decisions independently within the limits of the rights granted him, unafraid of assuming responsibility.

The experience gained indicates that matters have been going best with those state acceptance departments whose personnel have gotten together with enterprise specialists mainly in correcting the reasons for defects that some degree or another have been detracting from the performance characteristics of the end product, have been lowering indicators of the product's purpose, especially the indicators of reliability and durability characteristics. At the same time, they display as a rule the required exactingness, persistence, and adherence to principle. If because of their compliance state acceptance directors do not prevent the production of poor-quality products, then they are penalized. For example, the director of state acceptance at the Gorkiy Television Plant was removed from that position for accepting "Chayka" television sets with defects that detracted from their performance characteristics.

It is clear that all defects which do not detract from the performance characteristics and principal technical characteristics of products are also to be eliminated. The necessary measures are being worked out to that end, deadlines are being set for performance of the effort, and the persons responsible are being designated. But if in the first stage these efforts seem to be secondary, in the second they can and must become paramount.

It is thus advisable for state acceptance directors to concentrate attention and achieve the necessary results in performing the principal tasks of each successive stage of efforts aimed at improving production and raising the quality of the product produced to the world level.

Analysis as the Basis of Purposive Effort

A thoroughly sound selection of the main direction of the effort of the state acceptance department is possible only if its director is able to organize a thorough and systematic analysis not only of the product's design and the manufacturing technology, but also of its use in operation.

The direct results of an analysis conducted by state acceptance are a list of "sore points" or "bottlenecks" in production; a corresponding list for compulsory inspection and acceptance, covering the finished product and its components (assembly units and parts), materials,

intermediate products, and also operations in the manufacturing process subject to mandatory full or sample inspection and acceptance; the very makeup, number, and composition of personnel of the state acceptance department; the scheme for deployment of the groups and sections for inspection, acceptance, and tests; the places and schedules for unannounced spot checks and many other things. And the more accurate, thorough, and comprehensive the analysis of the state of affairs with product quality at the enterprise, the more purposeful and effective will be the joint effort of state acceptance with the enterprise's staff services and subdivisions in preventing defects in more and more of the early stages of production, the more reliable acceptance of finished products will be, and the higher the guarantee there will be of the stability of production of a good-quality product.

Thus selection of the main directions and the results achieved by state acceptance depend largely on the kind of analysis it does, the decisions it takes on the basis of the analysis, and how it carries out those decisions. But since the necessary analysis is possible only if the relevant information is available, and since technical inspection and testing of the product are important sources of that information, it is by no means a matter of indifference to state acceptance how that inspection and testing are done.

Technical inspection and interaction of state acceptance with the OTK have already been covered (see STANDARD I KACHESTVO, No 8, 1987, pp 12-15). As for the product tests conducted at the enterprise and outside it, state acceptance directors must achieve high objectivity of their results, since only in this case is it possible to evaluate with sufficient accuracy the product's actual quality, that appraisal being indispensable to making the optimum decision on bringing those results up to what they should be.

One of the important directions of efforts to perform this task is to be certain that these tests meet the requirements contained in GOST 26964-86 "Rules for State Product Acceptance, Basic Principles." This means seeing that its requirements and recommendations are appropriately concretized in the technical specification concerning the product being tested (in the sections on "Rules of Acceptance"), as well as in the design documentation and manufacturing documentation for it. Thus it is possible and necessary in the performance of tests to take into account not only the specific nature of the sector, but also the individual specificity of each particular enterprise and the peculiarities of the product it makes.

No Flood of Paper!

It is also indispensable to take into account the peculiarities of each particular production operation in organizing the paperwork of state acceptance, the basic principles of which have been reflected in RD 50-612-86

"Regulation on Organization of the Operation of State Acceptance" and GOST 26964-86. It is very important to emphasize in this connection that these documents were drafted for use at all enterprises at which state acceptance has been introduced. That is why they envisage the full set of documents for all situations and at any enterprise. But this does not mean at all that that entire set must obligatorily be used at every particular enterprise.

Nevertheless, many state acceptance directors have been looking upon the forms of the documents given in RD 50-612-86 and GOST 26964-86 not as recommended items, but as mandatory items and are demanding their unswerving use, achieving "paper coverage" of practically every step in their work. This kind of mindless punctilioseness sometimes in fact engenders swollen flows of paper which substantially complicate the work both of the enterprise and of the state acceptance department itself, evoking justified reproaches and altogether well-founded criticism from both sides.

In organizing or improving paperwork, every state acceptance director must choose for practical use only those documents which are indispensable for recording that everything necessary is being submitted for acceptance and is being accepted in the proper way. Experience shows that taking this approach to paperwork in the context of the particular conditions of the enterprise and the peculiarities of the product subject to acceptance makes it possible for the state acceptance department to reduce the flows of paper to the minimum necessary level.

At the same time, it should not go to the other extreme and under the influence of criticism and pressure from production people eliminate from use documents necessary to the effort. For instance, enterprise personnel are especially irritated by the need to fill out documents for submittal of products to state acceptance all over again after they have put finishing touches on the products to comply with the suggestions of state acceptance. But the difficulties which enterprise personnel confront in a case when a product is returned for additional work have not been brought about by state acceptance at all, but by the poor quality of the product's manufacture.

And as a matter of fact, state acceptance does not need the documents filled out all over again for their intrinsic value. The purpose of this is to eliminate the very possibility of defects being repeated, and it is very important to that end that every case of product returned for additional work be perceived at the enterprise as an exceptional event, for every defect detected to be analyzed from every angle so that the reasons for its occurrence are discovered and corrected. That is why the state acceptance department has been demanding and will demand documentary confirmation by responsible enterprise officials to the effect that everything necessary has been done to preclude the reoccurrence of defects.

Thus paper is not an end in itself for the state acceptance department: there should be no more paper than is necessary to get the job done. And this approach to paperwork must be pursued not only by the director of the state acceptance department, but also by the top manager of the enterprise and must become an important element in the common platform of their mutual understanding, the need for which we have already talked about.

It is this approach that we regularly explain to the directors of state acceptance departments in the various sector conferences involving responsible officials of ministries and the heads of their administrations for quality, deputy directors for quality, and the chiefs of technical inspection departments of associations and enterprises. It has also been appropriately reflected in GOST 26964-86 and RD 50-612-86 when they were corrected to take into account the experience that had been gained in the work of state acceptance.

For instance, Amendment No 1 to GOST 26964-86 "Rules for State Product Acceptance, Basic Principles" was adopted 7 September 1987 and took effect 15 September 1987; it simplified the procedure for filling out, submitting, and recording the results of acceptance tests related to series (volume) production, allowing this to be done in journals rather than on separate sheets. Moreover, a single journal can be kept to contain these records. Form 7 of Appendix 3 can be supplemented with the content of Form 6 of Appendix 3 without preparing an independent document. The same Amendment No 1 eliminates from Appendix 3 Forms 3, 8, and 10. This simplifies and reduces the filling out of forms both by enterprise personnel and the personnel of the state acceptance department, which should help to concentrate attention on the actual monitoring of product quality.

The "production of paper" would be reduced even more if state acceptance authorities were not repeatedly forced to return products submitted for additional work, i.e. if there were a sharp improvement in the quality of effort of all the personnel of enterprises, including the OTK.

Amendment No 1 to RD 50-612-86 "Principles for Organizing the Effort of State Acceptance," which also took effect on 15 September 1987, has granted directors of state acceptance departments the opportunity to simplify the keeping of records and to reduce the number of items to be recorded. What is more, the number of signatures in the "Assignment for Unannounced Spot Check of Production" has been reduced, and the "Journal for Recording Issuance of Assignments for Unannounced Spot Checks" as well as the "Certificate of Inspection of Returned Products" have been eliminated.

We should note in conclusion that as time passes, as experience is gained, and as that experience is analyzed more thoroughly, success will really be achieved in

drawing many more specific conclusions and recommendations to improve the work of state acceptance, which is called upon to play an important role in solving the problem of a radical improvement of product quality.

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07045

PLANNING, PLAN IMPLEMENTATION

Planning Institute Official on Price, Normative, Tax Changes

*18200082a Moscow EKONOMICHESKAYA GAZETA
in Russian No 4, Jan 88 p 8*

[Article by A. Zagorodnyuk, head of the Department of Economics and Planning Organization for TsNIIiprojekt of USSR Gosstroy and Candidate of Economic Sciences: "Plan By Agreement"]

[Text] It is appropriate to believe that planning organizations have for some time been operating on a cost accounting basis, since their profits are planned. However, the cost accounting that has existed up until this time has only been an imitation of true cost accounting. Indeed, it is no secret that the profit obtained by planners was embodied primarily in an estimate for the maintenance of an organization.

Commencing January of this year, the planners, together with a large group of workers in the scientific-technical sphere, began mastering for the very first time the true principles of self-support and self-financing.

An Initial Feature

During this modern stage in implementation of the new investment policy, a change is taking place in the special purpose function of planning. Compared to earlier when a great deal of emphasis was placed upon services for construction, today planning must serve as a pivotal point for the entire investment process. The planners will commence attracting the aid of scientists, designers, machine builders and contractors for participating in the development and implementation of plans. For the purpose of implementing such an integrating function, organizational-economic and legal conditions have now been created.

Today the planning institutes can fulfill diverse types of work (including design work) or they can enlist the aid of needed specialized organizations. In the process, the financing source is of little importance.

The strict limitations in the area of planning projected operations are being eliminated. The planners now conclude contracts with clients (including ministries) regardless of their departmental subordination and in the absence of any limitations in the selection of partners. They can be cooperatives and even individual citizens.

There is still one important innovation — the conversion over to contractual prices. Today they are determined prior to the commencement of work by agreement with the client. Their level will depend upon the effectiveness, quality and schedules for carrying out the work. The price lists for planning and research work in this process are not of decisive importance. Interference in the price formation process by bank institutes or higher organs is not tolerated. The determination of the price, additional payments and allowances and other economic obligations of the partners are considered to be a concern of the contractual parties.

The work subjects, their volumes and the planned profit (income) are also determined independently by the planning organization. Only work associated with ensuring the carrying out of state orders is viewed as mandatory for inclusion in the plan.

A higher organ approves a number of economic norms for the planning organizations — payments for funds, for labor resources and for withholdings for the state and local budgets. Normative withholdings are also being established for the centralized funds and the ministry's reserves.

Norms for the formation of the overall wage fund in percentages of the value of output and the material incentive fund in percentages of residual profit are also being established for those planning institutes which employ a form of cost accounting that is based upon a normative distribution of profit.

A fund for scientific-technical and social development (in percentages of residual profit or cost accounting income) is being formed in all planning organizations in accordance with the appropriate norms.

In addition, a norm is being established for withholdings for the centralized funds, from amortized deductions intended for the complete restoration of fixed capital (in percentages of the overall amount of these withholdings).

A basically new aspect is the establishment of a norm for the formation of a fund for currency withholdings (in an amount up to 50 percent of the currency earnings).

The principles set forth here entered into force in January of this year. To what extent were the planners prepared to work in accordance with the new procedures?

Such Different Approaches

Serious preparatory work in connection with the conversion of planning organizations over to complete cost accounting and self-financing has been carried out in USSR Minchermet (Ministry of Ferrous Metallurgy), USSR Gosstroy, USSR Mintyazhmash [Ministry of Heavy and Transport Machine Building] and USSR Ministry of Railways.

In Gidroproyekt [All-Union Planning, Surveying and Scientific Research Institute imeni S.Ya. Zhuk], where the conversion over to complete cost accounting was planned only for 1989, specialized economic training for workers attached to all structural subunits has already been organized. This also holds true for GlavAPU [Main Architectural Planning Administration of the City of Moscow] in Moscow. Some planning organizations have turned to TsNIIproyekt [Central Scientific Research Institute for Planning] with a recommendation for concluding contracts for instructing personnel in the new managerial methods and for rendering methodological assistance in the solving of specific economic situations. This has aided them in orienting themselves towards the selection of a more suitable cost accounting model and in intelligently developing the plans for economic norms. Thus the Giprorechtrans [State Institute for Planning in River Transportation] labor collective, after acquainting itself with the peculiarities of complete cost accounting within planning organizations, adopted the decision to convert over to the second model for cost accounting. The ministry agreed with the opinion expressed by the collective, despite the fact that by this time the institute had already been supplied with norms that were based upon the first cost accounting model.

At the same time, there are some alarming facts. Despite a detailed explanation of the new conditions, a number of planning organizations continue to defend their old approaches and their obsolete managerial methods. For example, Stalproyekt [State All-Union Institute for the Planning of Units for Steel Foundry and Rolling Mill Production in Ferrous Metallurgy] (of USSR Minchermet) advocates retention of the existing system for the formation of profit, wage funds and economic stimulation, depending upon the volume of work carried out. The Kazakh Santekhproyekt [State Planning Institute for Industrial Sanitary Engineering Planning of USSR Gosstroy] has taken a similar stand. The planning organizations of USSR Mintyazhmash also advocate the inviolability of expenditure cost accounting. These facts can only serve to alarm the leaders of ministries. It is obvious that they have not adequately explained the fact that there can be no return to the old methods and that the earlier this fact is understood, the better and more rapid will be the restructuring of planning.

Conversion Technology

As workers attached to the TsNIIproyekt Institute, which is responsible for the methodological management of the conversion of planning institutes, we are often presented with the question: what is the best method for use by a planning organization in converting over to complete cost accounting and self-financing? What is available in this regard in terms of accumulated experience?

We believe that it is first necessary to define all of the norms which ensure normal social and technical development for a collective. Thereafter, based upon pre-planning estimates, a contractual campaign must be carried out and appropriate plans must be developed and approved.

I will attempt to reveal the preparation technology using Gidroproyekt as an example.

We began this work with a computation of the institute's true requirements. We estimated that in order to convert over to the new official salaries the basic wage fund must be increased by not less than 30 percent. We took into account the fact that, owing to the prolonged development of the plans for hydraulic engineering, it would be possible to develop wages and stimulate labor based upon final results only if a reserve of funds was available in the amount of 30-50 percent of the basic fund.

We defined the requirements of the institute's workers for housing, medical and prophylactic bases, children's institutes and other social installations and services.

Guided by the norms for providing the personnel with production areas, labor resources and equipment and the expenditure norms for improving the skills of workers, we determined the resources required for these purposes. They amounted to 840 rubles per worker. (For comparison, the Kazakh Promstroyproyekt [State Planning Institute for General Construction and Sanitary-Engineering Planning of Industrial Establishments] considers 200 rubles to be an adequate amount for the fund for scientific-technical development and Lengiproenergomash — 150 rubles.

How To Earn the Funds

Subsequently we encounter the most important aspect: a collective must be able to earn these funds. It turned out that a real opportunity exists for increasing output by 20 percent through an improvement in labor organization and a reduction in the number of personnel. The development of more economic plans will make it possible to increase earnings by an additional 40 percent. This will make it possible to introduce new wage conditions even during the start-up period.

At Gidroproyekt, when defining the principal channels for making payments from cost accounting income, they based their position upon the fact that in addition to payments for the funds and resources, use must be made of taxation of the institute's remaining profit (income). A tax upon income (profit) must serve to regulate the cost accounting income, which in terms of its amount exceeds the accepted social norm.

In order to determine the tax upon income, use was made here of the recommendations made by TsNIIproyekt. Initially, the computed amount of income is determined by multiplying its base value by the percent of

growth in average wages, while taking into account the normative ratio for the rates of growth in labor productivity (ratio of income to the average-listed number of personnel) and the rates of growth in average wages (provided such a ratio has been established for the institute). The total amount of cost accounting income, taking into account the payments for the production funds and resources and the percentages for bank credit, is deducted from the total amount of income obtained. The result obtained represents the computed total amount of tax for the income (profit), which is distributed in accordance with the accepted ratios between the budget (state and local) and the higher organization.

As a result, they obtained the data required for developing the plans for economic and social development.

Following development of the plans, it was necessary to select the best form for implementing them and to critically examine the traditional structure of institutes for this purpose. In addition, it was necessary to study the possibility of employing collective forms for labor organization, with payments being made based upon the final results, and also the introduction of brigade cost accounting.

Consideration must be given to the conditions for including workers attached to functional departments and auxiliary services in the cost accounting relationships. Here the greatest complications will have to do with determining the coefficients for the contribution by labor and overcoming the traditional "controller" style for their activity. Workers attached to these departments and services must devote additional thought to their place in the production process. Administration, auxiliary operations and information activities — these are services which must be paid for by the cost accounting brigades. The conversion of administrative and auxiliary services (excluding those which are truly needed for controlling operations) over to cost accounting operations will make it possible to determine where the surplus personnel are located and on this basis to strengthen the weaker sectors (for example, financial planning). In this manner, conditions will be created for the use of a completed form of brigade cost accounting in all subunits of a planning organization. However, this is only the initial stage in the establishment of true cost accounting in planning work. A great amount of work still lies ahead.

7026

Inclusion of New Prices, Resource Expenditures in Planning Urged

18200061 Moscow *PLANOVYE KHOZYAYSTVO* in Russian No 11, Nov 87 pp 101-110

[Article by V. Smirnov, A. Vissarionov, and S. Sinelnikov-Murylev, candidates of economic sciences, Scientific Research Economics Institute of USSR Gosplan: "The Problems of Strengthening the Economic Approach in Planning"; published by way of discussion]

[Text] The task was set at the June (1987) Plenum of the CPSU Central Committee of a restructuring of the system for management of the country's economy in which the transition to economic methods of planning was seen as a leading element. These are some of the directions of restructuring: a sharp broadening of the limits on the independence of enterprises (associations) and their conversion to full cost accounting and self-financing; a major reform of planning, pricing, and the finance-and-credit mechanism; transition to wholesale trade in means of production, etc.

One of the tasks set in the planning field is transforming the state 5-year plan into the principal form of planning activity. In our view the following are the most important and absolutely indispensable conditions for that:

- i. transition to determination of necessary changes of wholesale and retail prices in the process of compiling 5-year plans. Establishment of new prices as part of the 5-year plan and establishment of the indicators of the plan in the new prices;
- ii. the drafting of 5-year financial plans at all levels of management to guarantee the soundness and consequently stability of economic normatives;
- iii. compilation of calculated physical balances in the 5-year plan of the national economy solely for products which have importance to shaping the structure. Performance of the appropriate work on balances at the level of sector and regions. The formation of distribution plans would be limited to products which are the subject of a state order or represent direct resource support of a state order;
- iv. determination of limits of state central capital investments in the 5-year plan (to cover the growth of production established in the plan);
- v. definitive distribution in the 5-year plan of resources to carry out the state target programs which have been adopted. Adoption of programs outside the plan would not be permitted;
- vi. creation of an interrelated set of 5-year planned reserves of physical and financial resources, capital investments, and production capacities.

All of the problems enumerated are interconnected. But the problem of forecasting and planning prices is still the most important and key problem at the juncture between planning and cost accounting.

The question of the system of payments for production resources also has fundamental importance for the transition to a qualitatively new level of planning. In postponing solution of that problem, we have actually been deferring application of the progressive method of economic normatives in planning and management. The normative must be **uniform**; their use will be possible if

and when economic methods (in the form of charges on all resources supplied by society) achieve equalization of conditions for the economic activity of enterprises. Application of **individual** economic normatives (this was convincingly shown by the 1984-1985 experiment in the industrial sector and the experiment in introducing the system of self-financing in 1987) is a normative method only in a hypothetical sense. Retaining the individual approach to every enterprise in planning makes the problem of relieving the upper echelons of management of operational economic activity improper to them insoluble.

The theoretical work and scientific-practical work done on forecasting and planning prices, on economic appraisal of all resources, and on formation of a system of charges for their use requires an activity that is lengthy and sizable in scale. It cannot yield a return overnight. In a way, these are "capital investments" necessary to the transition to a qualitatively new level of planning and management.

Combined Planning of Physical and Value Proportions

The low base level of development of economic methods of conducting economic activity in the country is a restriction upon the possibility of their instantaneous introduction. Now that the general orientation of the major restructuring of the economic mechanism from predominantly administrative to predominantly economic methods of management has been decided, then, progress toward the goal that has been outlined must be unswerving.

Even the initial stage of restructuring presupposes significant transformations of planning procedure and process. This applies first of all to creation of the mechanism for linking the planning of physical proportions, prices, and financial-and-value normatives. This mechanism must consist of two basic procedures: linkage of physical and financial-and-value proportions for the 5-year period and longer range at the macroeconomic level; linkage of these proportions in the course of practical realization of 5-year plans. These two are organically interconnected and indispensable. The first must be determining in nature and create the foundation (above all an idea of the movement of multiannual macroeconomic normatives) for realization of the second.

The procedure for preliminary (before plan fulfillment begins) linkage of physical and financial-and-value proportions over the multiannual period will make it possible to work out a balanced system of macroeconomic normatives to break them down to branches and sectors (enterprises) in good time, which will guarantee the determining role of the multiannual plan. The procedure must be performed "slidewise" and must represent a stage-by-stage elaboration of the economic normatives. It should be conducted on the basis of development and

use of macroeconomic models for planning and forecasting rates and proportions of economic growth, a multiannual balance of the national economy, other planning and financial balances, as well as the forecasting of dynamic behavior of prices. Mutually balanced value normatives regulating production and the qualitative characteristics of growth (general directions for updating technology, for application of new processes, and so on) would in time be the effective result of the system of macroeconomic planning.

Linkage of the multiannual movement of physical proportions and prices should become a most important subsystem of macroeconomic planning. Improvement of the methodology of planning in that direction requires that the impact of prices on the physical aspect of production be more fully taken into account. The first steps might be to work out a system of sectoral coefficients of the approximate elasticity of output relative to prices, various kinds of forecasting computations, etc.

At the present time, there is no unified methodology for management of prices, interest rates on credit, financial normatives, and the parameters of circulation of money. But the mechanism for forming specific proportionality depends to a considerable degree on the combined effect of these instruments. That is why it is advisable in the 5-year plan to describe the procedure for linked changing of prices, interest rates, charges on resources, and taxes in various economic situations.

As economic methods are introduced and the relevant experience is gained, value normatives must be transformed from production magnitudes (relative to the planned volume of production) into instruments determining the volume and structure of production in accordance with the planned goals of development.

The purpose of the second procedure is to guarantee organizational and logical linkage of formation of specific physical proportions, prices of specific products, and all the systems of financial-and-value normatives with the system of macroeconomic proportions; to create a mechanism for taking into account the direct impact and feedback of the dynamic behavior of the physical structure of production, prices, and financial-and-credit instruments in a linkage with the prospects for economic development. The prices of a restricted group of the most important products (400-500 specific designations) must become the pivotal elements of this procedure. The dynamic behavior of their changes over the 5-year period is planned centrally and must be broken down in advance to enterprises (before they work out their draft plans). The same applies to the basic financial-and-value and credit normatives.

In practice, during realization of the plan, the procedure for linkage of specific physical proportions, all types of prices (rate schedules) and financial-and-value normatives may in nature be only an iterative, step-by-step process. Its task is to bring the operation of operationally

regulated financial-and-price instruments (the rates of additional taxation, contract prices, penalties, charges on assets, and so on) into line with the stable normatives that remain in effect for a lengthy period (the standard proportions applied in distribution of profit, the prices of the most important products, interest rates on long-term credit, and so on). This presupposes the existence of more flexible and responsive mechanisms for "breaking down" and balancing current physical and financial-and-price proportions. Continuous 2-year planning may be such a mechanism in the context of gradually expanding wholesale trade.

The point is that full preliminary linkage of all specific physical proportions, prices, and normatives may in our view be practically impossible in the stage of compiling the 5-year plan. In principle, planning authorities cannot and indeed should not foresee 5 years in advance the trends of production and the dynamic behavior of the prices of a sizable portion of specific products, the unpredictable impact of scientific-technical progress, and the optimality of all economic relations. In practice, enterprises, orienting toward reference figures, state orders, normatives, and price indices of basic products, raw materials, and supplies will at the same time be reaching agreements both concerning the physical content of product deliveries and also negotiated prices. This will make it possible from below to link output in physical terms to the actual dynamic behavior of prices of particular products in a planned manner and thereby strengthen the connection between the 5-year plan and the actual economic situation.

Planning economic normatives (instead of planning the volume of output in physical and value terms) makes the system of plans more open to ongoing inclusion of possibilities, innovations, and maneuvers not taken into account in advance. If an unforeseen measure is "inscribed" within the limits of efficiency determined by the system of general normatives, then in the context of wholesale trade of means of production there would be no fundamental difficulties from the standpoint of planning technology. It is to that same end that it would be advisable to create reserves of commodity resources in the system of wholesale trade, reserves of production capacities, and so on.

There is a need to take special note that we are not talking here about the well-known practice of adjustments of plans. Enterprises independently working out their own plans so as to take into account centrally established normatives will be economically accountable to the state. If the change which an enterprise makes in a plan does not reduce the size of its income or its payments into the state budget, if it does not disrupt contractual obligations, then it is an advisable change from any point of view.

In a number of measures of the initial stage of improving planning the question has been raised of the resource support for the growing volume of decentralized capital

investments. Decisions already taken concerning their priority material-technical and other support can hardly be seen as successful. The result is that resources are to be furnished for centralized capital investments and current production as a second order of priority. In our view, the problem of the physical coverage of decentralized sources should be directly linked to wholesale trade in means of production.

The question of decentralized capital investment and of their limits remains a topic of discussion. Their lower limit arouses no doubts—those are the limits of simple reproduction, i.e., the modernization and retooling of production. The financing of that portion of the process of reproduction must be accomplished entirely from decentralized sources. Even in 1988 the centralized plan for production and distribution of allocations for this output should be reduced by approximately the size of the resource coverage of these sources. The products which are lacking must be planned independently by enterprises on the basis of economic contracts without any sort of allocations or limits whatsoever, at negotiated prices. These products will be profitable to the manufacturer in a number of cases either because of the higher price or the additional possibility of selling products manufactured with a process that has been thoroughly mastered, from above-allowance stocks of raw materials, at convenient times, and so on.

But the output of these products must not be allowed to detract from the plan that has been centrally established. Consequently, there is a need to introduce an effective system of penalties for failure to meet contractual obligations based on allocations. That system must be such that it would be advantageous to deliver products under contracts outside the state order only when there is a full guarantee of that order's fulfillment. For example, the penalty might be to take away the entire net output obtained from performance of such contracts over the reporting period (the month or quarter). This kind of economic measure seems more flexible than a straightforward administrative permission to produce products under such contracts only after centrally assigned targets have been met.

The gradual expansion of wholesale trade in means of production without allocations and its transformation into the principal organizational form of horizontal relationships in the economy is a most important process within the framework of introducing economic methods into planning practice. It was clearly defined in the Law on the State Enterprise (Association). Even the first steps in this direction require the performance of a number of significant measures related to economic organization and aimed at setting up the mechanism for independent selection of supplier by consumer (acceptable from the consumer's standpoint) and conclusion of a contract for delivery of products on that basis. But given the present imbalance between supply and demand and the maladjustment of the system of prices, their multiannual planning, and the charges on resources, it is advisable to

restrict centrally the dynamic behavior of negotiated prices, to apply progressive taxation to surplus income, and in part to differentiate financial-and-value normatives. The need for this will gradually disappear as economic methods are introduced and developed.

The Planning of Forecasting of Prices

The heart of the problem is not to rigidly plan the dynamic behavior of prices of a large number of specific products at the level of socially necessary expenditures (ONZ) for the 5-year period, which is by definition impossible, but to set up a mechanism for bringing prices closer to the ONZ and plugging that mechanism into the process of compiling national economic plans. If prices are to be brought closer to value, they have to be made more flexible. Yet the present planning technology is not well-adapted to taking into account the impact of the day-to-day change of prices on the physical proportions of production.

In our view, a two-sided approach is needed here. First, a procedure should be conducted of multiannual planning of sectoral wholesale price indices for the 5-year period and there should be general revisions of wholesale and retail prices regularly in the stage of drafting 5-year plans, when those prices would be linked to physical and financial-and-value proportions. Of course, the realization of these measures involves no small difficulties. The preparation has just begun for creating the system of comprehensive and long-term price forecasting. The problem has not yet been solved of interlinkage between the planning of sectoral price levels and the current planning of prices of specific products. Practical methods have not been worked out for taking into account the active influence of prices planned a priori on the system of physical proportions of the plan, and so on. But still such a mechanism of planning would already represent a substantial step forward from the present mechanism.

Second, in the context of invigoration of money-exchange relations a mechanism needs to be built up from below to link prices to the formation of specific proportions in exchange and to link the system of horizontal connections to the drafting of the plan by the enterprise, which would take its orientation from the system of financial-and-value normatives. It is important here to bring the consumer into the process of pricing and to eliminate the monopoly position of the producer.

Multiannual planning of prices is impossible without radical improvement of the entire system of pricing. Present practice is characterized by diversity of the approaches in methods and methodologies to structuring various types of prices, and to a considerable degree this is the consequence of a failure to work out a number of theoretical problems. In our view, the main shortcoming is that a mechanism has not been fine-tuned for objective commensuration of costs and results even in current practice, not to mention over the long range.

The conception of prices of reproduction might be the general methodological basis for improving prices. The indispensable thing here is to precisely take into account the conditions for the sale and consumption of the product, which presupposes paying attention in multiannual planning of the dynamic behavior of prices to the degree of satisfaction of a specific need for the product to be produced, to the relationship between the real supply of the product and the effective demand for it. This is an especially important question as the transition is made to wholesale trade in means of production and as the setting of prices by agreement becomes more widespread. These processes are oriented toward guaranteeing the most responsive reaction of producers to changes in what consumers are looking for. They propose coordinated changes in prices and production so that neither a shortage nor an overstocking of means of production will come about.

If multiannual dynamic behavior of prices of products and effective demand are not taken into account in 5-year planning, then it is impossible to substantiate the real need for it and to compile a balanced plan of its production and distribution. (It should be noted that effective demand is not formed at random, but under the impact of centrally planned financial-and-value normatives and instruments and can be recorded.) Calculation of the need for a product solely in physical terms does not make it possible to compile a balanced plan of current production and capital investments, to link it to the real movement of costs, but rather imparts disproportionality in the development of sectors. That is why these factors must determine the strategy of distribution of capital investments, the strategy for formation of financial-and-credit resources, and so on.

The principles of setting prices we have examined must be applied both in planning and in forecasting the upper and lower limits of sector prices and the forecasting of changes in their average levels.

On the whole, determination of the general price level and standard rates of efficient utilization of production resources is a task of macroeconomic planning. It must also take into account the multiannual influence of such factors as the need to maintain a certain relation (in value terms) between the consumption fund and the accumulation fund, progressive trends in development of means of production, the influence of advances of scientific-technical progress, and the balance among the processes of formation of costs and distribution of the product. It is important to take into account the movement of the scale of prices, the purchasing power of the monetary unit, the impact of acceleration of intensification of production on the process of forming the net product (included in the price), the movement of world prices, the indispensable need for optimum combination of flexibility and stability of prices, and so on.

The research we have done in forecasting sector price levels has made it possible to substantiate the following iterative computational scheme. First of all, in working

out a price forecast it is advisable to analyze the process of the formation of sector costs. In evaluation of the movement of the net output of sectors attention is paid to the volume of economic resources drawn into production and the efficiency of their utilization in accordance with the requirements of the conception of prices of reproduction. The forecast is built up so as to take into account the information contained in Columns I and III of the sections of the planned intersector balance of production and distribution of products (in the breakdown by pure branches and sectors and with the price indices for the branches and sectors of the real economy converted).

Inclusion of net output in prices is directly related to substantiation of the strategy for economic growth. That is why it is important in the stage of compiling the plan to achieve a straightforward relationship between multiannual planning of prices and the dynamic behavior of the national income. The intersector balance is recomputed in the prices determined in the manner indicated above, and its Sections I and II are analyzed. Here we take into account the need to maintain the established relation between the reimbursement fund, the consumption fund, and the accumulation fund. Later, the need arises to correct the prices computed in the preliminary stage. Here a return is made to the initial stage of calculations so as to analyze changes in the formation of costs. The process is repeated and comes down to building up a balanced system of multiannual sectoral price indices.

Advanced 5-year planning of prices must include both firm ("fixed" multiannual prices of the most important products) and also elements which are not rigid (the forecast of the dynamic behavior of other types of prices). Only on this basis is it possible to determine the multiannual movement of sectoral price levels. The latter serves as the basis for doing the consolidated physical-and-financial balancing of national economic plans and the drafting of financial-and-credit plans.

Rigid centralized 5-year planning must extend to the wholesale prices of the most important products, including prices and rate schedules for the products of the fuel and energy complex and extractive industries, state purchase prices for agricultural products, rate schedules for transportation and communication, and also retail prices of the principal consumer goods, the most essential foodstuffs, and rate schedules for the most important services rendered to the public.

The remaining and gradually expanding group of products would be covered by negotiated pricing, whose basic principles are centrally regulated. They include the procedure for formal calculation of the agreed production cost (with gradual transition from the melting-pot method to an order-by-order and product-by-product calculation); the dynamic behavior of the upper and lower limits of negotiated prices (by branches and product groups); the standard periods allowed for agreement

of prices; the procedure for examination of price disputes by arbitration. The dynamic behavior of negotiated prices can be centrally regulated indirectly by adjustable interest rates on credit, charges on resources, penalties for hiking up prices, progressive taxation of income which the supplier obtains for every percentage point prices rise above a certain level, and so on.

The System of Charges on Resources

One of the most important elements of the economic mechanism making it possible to determine the final results of the operation of enterprises is the charges for use of all types of production resources: physical, financial, labor, and natural. The system of paying a charge for resources represents a form of responsibility of enterprises to the state for efficient utilization of those resources. When coordinated with other elements of the economic mechanism, it makes it possible to equalize objectively different conditions for the conduct of economic activity by individual enterprises on the basis of identification of the contribution of every production collective to the results of the national economy.

The size of net output, which, however, depends on the conditions of production (technical adequacy, natural conditions, etc.), is the yardstick for measuring the operating results of enterprise collectives. Net output can be converted to uniform conditions of the application of labor by means of charges on resources, which make it possible to distinguish within it that share which corresponds to the collective's contribution in the form of work.

Moreover, the system in which a charge is paid on resources makes it possible to improve the accuracy of national economic calculations of the costs of production of products and services.

In the context of cost accounting the net profit remaining after deduction of the charges must be distributed between the state budget and the enterprise at standard rates set down in the plan. Here the deductions from profit in the form of the tax perform a number of functions that can be distinguished from those of the charges on resources. The tax on profit can compensate the insufficiently accurate determination of the rates of the charges on resources. The progressive income tax counteracts unjustified hiking up of negotiated prices, since the profit obtained will to a considerable degree be subject to confiscation into the budget. It also smooths out the deficiency of centralized pricing. In addition, when the rates of the charge on resources are stable, the deductions from profit paid as tax make it possible to achieve economic motivation of central management authorities to increase profit.

The basis for computation of the level of the charge on resources is the evaluation of the benefit to the national economy from the use of those resources. This benefit breaks down into the normative portion and the rent

portion. All enterprises operating normally, including those which are least efficient and are the last included in the balance of production of any product, are expected to utilize productive capital and manpower in such a way that the benefit obtained will not be less than the standard level. This circumstance affords the possibility of setting the rates of the charge on a particular resource per unit of the resource possessed by the enterprise so that it is uniform for all sectors of the national economy.

In addition to the normative benefit, enterprises which have relatively better conditions for the conduct of economic activity, which involve distinctions in natural factors, geographic position, the adequacy of productive capital at various technical levels, obtain additional differential income. The rates of the charges making it possible to take from the enterprise a portion of income of this type cannot be established so that they are uniform. Some of the unearned income can optimally be taken away in the form of a fixed amount by means of differentiated rates calculated on the basis of individual appraisals of the potential operating efficiency of each production entity. At the same time, a uniform charge per unit of the resource possessed by the enterprise must be established for productive capital and labor resources (in the case of labor resources it would differ from region to region and from one skill group to another).

Quite often the opinion is encountered in the press that under the conditions of self-financing of the development of enterprises the charge on capital should be given up. This approach is without basis in our view. The reason is that the capital going for development of enterprises, regardless of the specific method of financing, is derived from a single social accumulation fund and must accordingly be used at the standard rate of efficiency. In an analysis of the various aspects of the development of production we should not confuse reimbursement of the value of means of production (depreciation of capital, purchasing on credit, or acquisition with the resources of the enterprise) with regulation of the minimum allowable efficiency of utilization of productive capital. The rate of efficiency of investments makes it possible to centrally determine the needs of society for optimum use of capital resources, and the charge on capital (the rate of interest on loans) makes it possible to stiffen these requirements by means of an impact on the system of economic interests of entities in the economy. Without it, productive capital built out of the resources of the enterprise can in many cases prove less efficient than capital built from state capital investments.

Planning computations of the values of the standard rate of efficiency of capital investments and the benefit of work activity can be made using the models of mathematical economics. The essential thing here is to balance the demand for resources and their total volume, to determine the socially justified rates at which current costs can be replaced by capital costs and labor resources by productive capital. The general characteristics,

requirements, and patterns which must be met by the system of economic instruments for management of the economy can be established by means of treatments of this kind, and this is also the case of the analytical expressions obtained for determining the standard rates of efficiency in terms of planned parameters forming macroeconomic proportions. Calculation of the initial values of rent (fixed) payments can be based on an analysis of the results of production activity over the period preceding the planning period, on the basis of planning computations, as well as various types of forecasting computations. It is very important here to study thoroughly the natural resources (land, timber, water, mineral deposits, and so on). These explorations, reflected in the respective cadasters, make it possible to objectify the process of planning, to discover differences in conditions for the conduct of economic activity resulting from the quality of natural factors.

To determine the original proportion of rent payments a portion of production costs (including wages), charges on capital and labor resources, calculated at the uniform standard rates, and interest on credit should be deducted from the base volume of the net product. The amount of differential income obtained, which includes excess profit and a portion of normal profit, is subject to distribution between the cost-accounting funds of the enterprise and the state budget. To accomplish that one must determine the fixed amount of rent to be paid into the budget and the rates of tax deductions paid into the budget from the remainder.

The amount of income remaining at the disposition of the enterprise changes as a function of measures to improve production and as a function of improvement of planning and management. When the total amount of rent payments into the budget is fixed, the collective of the enterprise can use the income obtained from the innovations it has made until such time as the latter become a socially normal phenomenon. This determines the need for appropriate adjustments in the individualized charges. For instance, invariable charges may be fixed for the 5-year period, and the higher production efficiency would be taken into account when their level is determined for a new period. Another method is possible in which the collective would use the results of its creative efforts for a certain time, but not from the beginning of the planning period, but from the moment when the measure is taken that has raised production efficiency.

These adjustments must be made by uniform methods, using uniform normatives, and the calculations they involve can be performed on a decentralized basis by the enterprises themselves. The role of central authorities comes down here only to monitoring observance of the rules established by economic legislation.

Establishment of an advanced system of charges requires a simultaneous change in the entire system of prices and pricing. At first, introduction of the charges may in a

number of cases (specifically for mineral and raw material resources, water, environmental pollution) be made without the appropriate adjustment of prices. This is possible concerning those portions of profit which are confiscated into the budget under other items (fixed payments, the undistributed remainder, deductions at standard rates). But it should be mentioned here that if the charge on capital and labor resources is equally necessary in all sectors and branches, then introduction of rent payments is most urgent in the branches of the extractive industry and in agriculture.

Possible Practical Solutions During the 12th FYP

In the current 5-year period the use of normative methods of profit distribution (or distribution of gross income) must correspond to the assignments of the 5-year and annual plans that have already been formed. That is why their application may, strictly speaking, be only formal in nature. The positive side of this introduction is preparation for the widespread dissemination of economic methods of management, the testing of the normatives, and the training of management personnel.

We have done calculations to clarify the possibility of implementing a normative scheme for distribution of gross income (profit) in a number of machinebuilding ministries over the remaining 3 years of the 5-year period. It is clear that the condition creating possibilities for use of uniform rules and scales in the distribution of income when the 5-year plan has been established in detail consists of the approximately equal structure of the income of individual enterprises, including the performance of decentralized capital investments (self-financing mainly of simple reproduction, technical reconstruction and retooling), formation of material incentive funds and funds for social development. This condition is not fulfilled in real plans for the functioning and development of enterprises. The reason is that the targets of the 5-year plan for the period 1988-1990 presuppose a substantial differentiation from enterprise to enterprise of deductions from profit paid to the ministry and to the state budget, whose size bears no relation at all to any indicator of their operating efficiency. In practical terms, the size of payments and deductions from profit into the budget and to the ministry is the undistributed remainder after formation of the production development fund, the fund for social development, and material incentive funds, which guarantee the financing of planned outlays. For instance, in a group of enterprises of Minelektrotekhprom which we examined the share of deductions paid into the state budget from calculated profit varied from 0 to 30 percent, the share of deductions paid to the ministry varied from 0 to 56 percent. At the same time, there are enterprises receiving subsidies from the ministry's fund.

We analyzed the possibility of introducing a charge on use of labor resources on the assumption that there would be no change in the plan in effect or in prices with the example of enterprises of USSR Minlegpishchemash

and USSR Minpribor. The hypothesis adopted was that it would be possible to cover the charge on labor resources by reducing the absolute amount (and rate) of the charge on capital and transfers from profit into the budget and to the ministry. The calculation showed that the size of the charge on labor resources must not exceed 300 rubles per man per year. Establishing the charge at a higher level would under the existing conditions bring about a sharp increase in the number of enterprises needing subsidies. We also examined variants with differing rates of the charge on capital (6 percent, 4 percent, and 2 percent). In the first case there would be an increase in the number of enterprises in need of sizable subsidies. The better-substantiated variant at the 4-percent level would require subsidies in considerably smaller size, and the deductions from profit into the budget would remain at a sufficient level. The charge on capital at 2 percent is also formally possible, but in this case it practically ceases to perform its functions. It needs to be noted that subsidies are needed not only by enterprises operating at low profit and at a loss, but also by profitable enterprises which have large planned outlays. This circumstance is an additional constraint in connection with introducing the charge on labor resources.

Thus the analysis shows that broad introduction of economic methods of economic activity will be a complicated and multistage process that will be going on for quite a long time.

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INVESTMENT, PRICES, BUDGET, FINANCE

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[Editorial: "The USSR State Budget for 1988 and Performing the Social Tasks of the 5-Year Planning Period"]

[Text] Our country's workers celebrated the 70th anniversary of Great October in an atmosphere of great political enthusiasm and work effort. The restructuring that has been going on in our country since the April (1985) Plenum of the CPSU Central Committee has become a consistent implementation of the ideals of the October Revolution. The party has set the task of fully revealing and utilizing all advantages and constructive capabilities of socialism, of transforming our country into a model of a highly developed state and a society of the most advanced economy, broad democracy, and a high standard of humane morality.

In the time that has passed immense work has been done to define the practical directions for performing these tasks. Today there is every reason to say that the integral conception of restructuring that has been worked out has been given practical embodiment in the documents of the party's 27th congress and the January and June (1987) Plenums of the CPSU Central Committee.

In carrying out the decisions of the 27th CPSU Congress and the January and June Plenums of the CPSU Central Committee, the workers of our country have become ever more actively involved in the process of restructuring. One of its most important elements is priority development of the social sphere, ever fuller satisfaction of the needs of the Soviet people for good working conditions, living conditions, rest and recreation, education, and medical service.

It was noted at the June (1987) Plenum of the CPSU Central Committee that nearly 40 billion rubles have been found to strengthen the material base of the social sphere over and above what was approved in the 5-year plan.

The rise in real personal income in the first 2 years of the 5-year planning period reached 4.6 percent, and the average wage of workers and employees met the proportions envisaged by the 5-year plan. There has been an increase in the production of consumer goods, and the service sector is expanding.

Construction of projects in the social sector, above all housing, is being done better. In 1987 the growth rate of capital investments to develop the social sphere were threefold greater than for the national economy as a whole. Capital investments in the material and technical base of the social sphere amounted to about 95 billion rubles in the first 2 years of the 5-year planning period, which is 11 billion rubles above the targets planned. This will make it possible to exceed the 5-year plan by more than 15 million square meters of housing and to overfulfill assignments for activation of children's preschool institutions, hospitals, and polyclinics.

There is an evident trend to improve the indicators characterizing the financial base that supports social development. The growth of profit was 6.6 percent in 1987. The first steps in devising an anticost mechanism of management of the economy have made it possible to reduce the consumption of raw materials, supplies, fuel, and electric power by 1.4 billion rubles and to meet the target for reducing the production cost of the products produced.

At the same time, the potential that exists for a growth of financial resources is not being sufficiently utilized, and state planning and financial discipline are not being observed everywhere. Minlegprom, Minneftekhimprom, Minstankoprom, Minselkhozmash, and USSR Minelek-trotexkhimprom have fallen short of fulfillment of the profit plan by sizable amounts. Many enterprises have allowed

production costs to rise, especially in the machinebuilding complex. In a number of ministries the relative size of losses has not only not decreased, it has even increased.

Collection of the turnover tax has fallen short of the amount planned. The reason for this situation lies in nonfulfillment of targets for additional production of consumer goods. Light industry and branches of machinebuilding are not satisfactorily meeting the needs of the population for these goods. USSR Ministry of Light Industry, operating under the new economic conditions, has been given the broadest rights in forming plans and the product mix, but above-allowance stocks of unsold products amounted to 700 million rubles as of 1 July 1987 (43 percent of the allowance), and the sum total of fines paid for short delivery of goods exceed 300 million rubles, which is 1.4-fold greater than for the corresponding period of the previous year.

The USSR State Budget for 1988, approved by the USSR Supreme Soviet, was drawn up so as to take into account more widespread use of the principles of full cost

accounting (*khozyaystvennyy raschet*) and self-financing in the sectors of the economy, above all at the base level—in enterprises and associations, and it furnishes money resources for a further growth of the economy and a rise in the material and cultural level of the people's life.

The strengthening of the social orientation of all our plans has been given practical embodiment in the country's financial plan and budget for 1988. On the whole, the expenditures of the state for construction and maintenance of housing, schools, hospitals, children's preschool institutions, clubs, culture centers, to increase production and improve the quality of food and consumer goods, to expand the service sphere, and for deductions to incentive funds amount to more than 402 billion rubles, which is 22 billion rubles more than in the 1987 plan. Two-thirds of all expenditures for these purposes, or 267.3 billion rubles, are being financed from the budget. Expenditures to meet the social needs of the workers which enterprises make out of their own funds and also with bank credits (see the table) are taking on ever greater importance in the context of full cost accounting and self-financing.

(In billion rubles)

	1988—Approved	
	From All Sources	From the Budget Alone
Expenditures for social welfare and cultural programs (not including science)	139.8	137.0
Centralized measures to raise the standard of living not distributed under the relevant items of the plan and budget	1.6	1.6
Financing the APK, including the payment of subsidies (not including deductions to incentive funds)	167.9	94.6
The financing of light industry, consumer services, passenger transportation, and trade (not including deductions to incentive funds)	27.4	7.9
Subsidies to theaters, for film distribution, for goods in the children's assortment, financing the difference between wholesale prices and retail prices of consumer goods, and fuel	5.6	1.5
Construction, maintenance, and repair of the housing stock, losses of housing and municipal service entities of local soviets	34.1	24.7
Transfers to the material incentive fund	19.0	—
Transfers to the fund for social welfare and cultural programs and housing construction (not including outlays for construction of housing and facilities for social welfare, cultural, and consumer services)	10.8	—

Solving the housing problem is an exceedingly important component of the social program. The party has set the task of seeing that by the year 2000 every family has a separate apartment or private house. An important step in this direction has to be made even during the current 5-year planning period. During the first 9 months of 1987 activation of housing increased 11 percent by comparison with the same period of the previous year. In 1988, 33.9 billion rubles are being allocated to housing construction from all sources of financing, which is 3.7

percent more than in 1987. The state subsidy allocated for maintenance and repair of housing amounts to 6.5 billion rubles.

Provision has been made for full financial support of other measures to increase the prosperity of the Soviet people which have been outlined by the plan for economic and social development. The allocation for new centralized measures alone amounts to 4.1 billion rubles.

Improvement of the organization of wages and introduction of new wage rates and salaries of personnel in the production sectors of the economy out of resources earned by work collectives will continue in the 3d year of the 5-year planning period. Introduction of regional coefficients applied to the wages of workers and employees in the Urals, in the northern and eastern rayons of Kazakhstan, and in the northern rayons of Kirov Oblast, to which an additional 855 million rubles are being committed in 1988, is to play a large role in attracting and keeping personnel.

Budget expenditures to finance education, science, health care, social security, culture, and athletics have been growing substantially. They will reach 153.6 billion rubles, i.e., they will grow by 13 billion rubles in just 1 year. The growth of these expenditures will be 9.2 percent, which is more than twice the size of the increase of other state expenditures. Appropriations for health care and physical fitness are rising at higher rates—13.4 percent, while those for education and culture are 11.3 percent.

Budget expenditures for the various social and cultural programs are as follows:

	(in billions of rubles)		Growth of Budget Expenditures	
	1987 Approved	1988 Approved	In 1987	In 1988
Public education, science, and culture	55.1	61.4	+2.9	+6.3
Health care and physical fitness	19.1	21.7	+1.6	+2.6
State social security and social insurance	66.4	70.5	+4.2	+4.1

More than 40 percent of the entire growth of expenditures (5.3 billion rubles) is going for a number of supplemental measures.

The budget calls for furnishing the necessary appropriations for further realization of the reform of general and vocational education, higher and secondary specialized education, acquisition of computers, raising the wages of personnel in health care and social security, strengthening the material and technical base of health care institutions and improving the services they render to the public.

Funds have been allocated to extend the hours of operation of children's preschool institutions, extended-day groups, and health care institutions in connection with transition of enterprises to operating on two and three shifts. State assistance to families with children is being bolstered, and the living and working conditions of women are being improved.

The allocation in the budget for public education and culture is 44.8 billion rubles. In addition, ministries, enterprises, and associations operating under the conditions of full cost accounting and self-financing are allocating 2.8 billion rubles for these purposes out of profit and from other sources.

By the end of 1988 the number of children in children's preschool institutions will reach 16.8 million, which is almost 500,000 more than in 1987. Budget expenditures for preschool institutions will increase 4.7 percent.

Particular attention has been paid to measures to radically improve the upbringing, schooling, and financial support of orphans and other children lacking parental care. An additional 420 million rubles are being allocated for those purposes. Average expenditures per child

in these institutions are increasing 62 percent and will amount to 3,800 rubles per year. To be specific, nutritional standards are being raised 56 percent for preschoolers.

More funds will be spent to provide work clothes for graduates at the time of job placement—about 1,140 rubles. Expenditures for toys, books, and other outlays are being raised more than sixfold. The expenditures per child to purchase clothing and footwear are increasing from 210 rubles to 533 rubles for schoolchildren and from 210 rubles to 329 rubles for preschoolers.

Appropriations have been set at 12.8 billion rubles to finance general public schools, which is an increase of 800 million rubles over last year. These schools have a student body of 43.2 million, 13.9 million of them in extended-day schools and groups.

The allocation to carry out the reform being conducted in the country of the general and vocational schools is 900 million rubles. As is well-known, the reform is being carried out in stages over the 1984-1995 period. Outlays to conduct it total 11 billion rubles, including 3.5 million rubles to raise wages. The wages of 3.4 million persons have been raised, and those of regular schools and vocational and technical schools are increasing from 137 rubles to 180 rubles on the average, i.e., by almost one-third.

The reform of higher and secondary specialized education has been under way since September 1987. Its performance will require 3.3 billion rubles up through the year of completion, 1.5 billion rubles to raise wages, and 700 million rubles of scholarships for students. Additional expenditures of the state in 1988 to increase the size of scholarships, to improve the financial support

of secondary and university students, and for the material and technical supply of VUZ's and educational and other expenses amount to 500 million rubles.

Within the total amount of outlays for science budget appropriations have been provided for in the amount of 17.8 billion rubles, which is 8.2 percent more than last year. The characteristic thing here is that the budget will be financing projects along the most important and promising lines of theoretical research in the social, natural, and engineering sciences; intersector scientific-technical problems which have statewide importance; creation of fundamentally new equipment and processes revolutionizing social production. In 1988 there will be a change in the procedure for financing research and development projects. The transition will be made from financing the regular operation of organizations to special-purpose financing of specific scientific research projects.

Expenditures for health care and physical fitness have been set at 21.7 billion rubles, an increase of 13.4 percent.

As is well-known, the CPSU Central Committee and USSR Council of Ministers have approved the Basic Directions for Development of Protection of the Health of the Population and for Restructuring the Health Care of the USSR, which make provision for further improvement of the material and technical base of health care institutions, an increase in outlays to provide highly effective medical equipment, to increase standard rates of consumption for meals, for medicine in hospitals, and to carry out a number of other measures. In 1988 certain measures to improve health care will already begin to be implemented. Standard allowances for meals and to acquire medicine, equipment, and stock items are being raised. An appropriation of 1.2 billion rubles is being made for this. Nutritional allowances for patients are being raised an average of 20 percent. There is a particularly appreciable increase in standard allowances to purchase medicine: 67 percent in maternity hospitals, an average of 50 percent in children's hospitals, more than 70 percent in therapeutic departments, and so on.

The wage increases for 7 million physicians and other health care and social security personnel should be an important social factor promoting improvement of medical service to the public. They are being raised by more than one-third on the average. The new wages are being introduced gradually. This effort began on 1 November 1986 and will be completed in 1992. The budget for 1988 appropriates 926 million rubles for that purpose, and the total appropriation up through the year of completion of this wage increase for medical and other personnel will be 3.5 billion rubles.

Outlays for state social insurance and social security amount to approximately 15 percent of all budget expenditures. Plans call for appropriating 70.5 billion rubles of state funds for these purposes in 1988, which is 6.2 percent more than last year's plan.

The pension coverage of workers, employees, and kolkhoz members is being consistently improved. An appropriation of 55.4 billion rubles is being made from the budget and other sources to pay all types of pensions.

The budget of state social insurance is set at 58.7 billion rubles, which is 6.6 percent more than the planned sum for 1987. Taking into account the planned wage fund and the number of workers and employees, the budget's own revenues from state social insurance have been envisaged in the amount of 28.6 billion rubles. An appropriation of 30.1 billion rubles will be made from the union budget to make up the amount that is lacking.

An appropriation of 7.7 billion rubles is being made to pay sick leave benefits. In addition, pursuant to the decisions of the 27th CPSU Congress an appropriation of 250 million rubles has been made to increase the number of days of paid leave to care for a sick child. In 1988 there will be a substantial increase in expenditures to pay benefits related to childbirth and the upbringing of children, which will reach 5 billion rubles.

Of the funds envisaged for organizing sanatorium and health resort treatment and vacations for workers, gratis and discounted travel vouchers to trade union health facilities will be received by 15.2 million workers and employees, and 17.8 million children will spend their school vacations in Pioneer camps.

Expenditures to pay pensions and benefits to kolkhoz members have been set at 6.6 billion rubles, 4.2 billion rubles of which consists of appropriations from the budget.

The allocation of immense resources from the state budget to develop the social sphere requires a high degree of responsibility on the part of all those directly related to serving the public. Resources must not simply be assimilated, but must be used for the state purpose with maximum benefit in raising the prosperity of the people. Performance of this task will be greatly promoted by the 1988 granting of broad rights to director of budget-financed institutions to spend the resources which have been saved without detriment to service to the public. They will not be transferred to the budget as in the past, but will remain in those institutions for development of social welfare and production.

It is the task of financial authorities to do everything to promote optimum utilization of the funds allocated to development of social welfare and cultural institutions, to introduce in them the principles of cost accounting, which is based on applying stable long-term financial norms and normatives. The first steps are already being taken in this direction. We might cite as an example the MNTK "Microsurgery of the Eye," which has been operating on the principles of cost accounting since 1986. This complex receives funds from the budget at the standard rate of 214 rubles per average patient who has gone through a course of treatment. The results of its

operation show high effectiveness of the cost-accounting elements. Thanks to the increased interest of personnel in the results of their work, the number of patients treated has more than doubled. Out of the funds saved in 1987 an appropriation of 1.2 million rubles has been made to economic incentive funds, which made it possible to acquire new medical equipment, to increase expenditures to feed patients over and above the established standards, and to raise the wages of personnel.

At the same time, broader use needs to be made of the possibility of paid medical service. At the present time the share of paid medical services in the total volume of medical aid does not exceed 1 percent, which is not conducive to meeting the needs of the public. The task has been set of increasing the share of paid services in medical services rendered fivefold by the year 2000. It is necessary to note in this connection that it will grow most noticeably in connection with providing comfortable services in dentistry, cosmetology, and homeopathy, as well as in a number of other directions.

The personnel in the financial system must also make a persistent search for ways of improving the quality of services to the public by increasing the cost-accounting interest of budget-financed organizations in the final results of their work. The reference here is to the results whose effectiveness is manifested outside the sphere of activity of these institutions. To be specific, increasing the quality of training of specialists, reducing the morbidity rate, and so on. Approximately 4 million workers do not report to work in our country every day because of temporary disability; about 8 billion rubles per year are spent on the basis of their sick leave cards. At the present time only the first attempts have been made to strengthen the linkage of the saving on expenditures from the budget for state social insurance to pay sick leave benefits with the cost-accounting interests of health care institutions. The saving achieved over the calculations for the 5-year period on expenditures for sick leave is committed as an addition for development of health care, mainly to acquire medical equipment. As a consequence, health care authorities received 140 million additional rubles in 1987. But we must see to it that this mechanism works effectively for the benefit of the public, since the basic purpose is not, of course, to save money, but precisely to improve medical service to the workers.

A sizable portion of the expenditures of the 1988 budget—more than 6 billion rubles—is being committed to payment of subsidies for maintenance of the housing stock. Current outlays of the state per square meter of residential floor space (not including outlays for capital construction) are 6 rubles 82 kopecks under the plan for 1988. Rent was established in 1924 at 1 ruble 61 kopecks per square meter and has not changed since that time.

Financial authorities need to be more persistent in achieving a reduction of the losses of housing and municipal service entities and a reduction of their need

for subsidies. A large role must accordingly be played by a more active transfer of the departmental housing stock to the jurisdiction of local soviets. The reason is that the costs of maintaining departmental housing stock are 15-20 percent higher than expenditures for the same purpose in directorates for building management. But the decisions taken on this matter are being carried out very slowly by enterprises and organizations. The potential and opportunities for which the housing and municipal service industry have for increasing their income are not being fully utilized by any means, nor are the funds allocated always being spent optimally and economically. Rent and heat charges are substantially undercollected because newly activated housing and vacated housing are not promptly occupied. According to the data of USSR Goskomstat, as of 1 January 1987 there were 14.9 million square meters of unoccupied floor space, including about 9 million square meters in new residential buildings. Every year about 25 million rubles in rent are lost because of delayed occupancy.

The promptness of paying rent has great importance for reducing the subsidies. Delinquent indebtedness based on rent amounts to about 60 million rubles. In Bashkir ASSR, Kuybyshev, Irkutsk, and Ulyanov Oblasts, and Krasnoyarsk Kray it exceeds 20 percent of the payments made per month. In Sukhumi as of 1 July 1987, 1,280 tenants had indebtedness amounting to 3 months or more.

Large resources are being allocated in the 1988 budget to cover losses in operation of municipal passenger transportation. The subsidy for bus transportation alone has been set at about 1 billion rubles. In this case, the operation at a loss depends to a considerable extent on the level of organization of traffic, and if that level is raised, significant potential can be mobilized. The Scientific Research Institute for Highway Transport has conducted a survey which showed that one out every six bus trips in cities is not paid for. This means that the state till is short about 200 million rubles every year.

The costs of passenger transportation can be reduced by the transition to the noncash form of service, but solid preparations have to be made for it, as experience is showing. Unfortunately, this was not taken into account in Moscow. There they did not make sufficient preparations for introduction of the innovation, they did not publicize the measures being carried out as much as they should have, they did not inform the entire population about the new procedure in paying for travel, and they allowed organizational deficiencies in the spread of the coupon system. As a consequence, large amounts of proceeds were lost, and this also tended to increase the size of the operating loss.

Substantial funds to develop the social sphere of enterprises and for material incentives of workers have been envisaged in the financial plans of industry. An appropriation of 23.5 billion rubles is being made for these purposes, or 20.4 percent of the profit of industry.

Construction of housing, children's preschool institutions, rest homes, boarding homes, and other social welfare and cultural facilities with the resources earned by enterprises will effectively contribute to invigoration of the human factor in the development and improvement of production.

A further improvement of normative methods of forming and distributing financial resources and the duration and stability of economic normatives are strengthening the confidence of enterprise collectives as to the favorable prospects for development of their production and social welfare, are helping to overcome the cost approach to economics, and are favoring the discovery of unused internal potential for increasing production efficiency and a growth of accumulation.

Provision is made in the 1988 budget for increasing the resources committed to development of the material and technical base of consumer goods production. An appropriation of 11.4 billion rubles (3.6 percent more than in 1987) is being made to finance light industry, which accounts for more than half of the volume of sales of nonfood commodities. Sizable amounts are being appropriated to develop production of consumer goods by other branches of industry.

The increase in the output of goods, improvement of their quality, and expansion of the assortment are helping to solve the problem of not only satisfying the growing effective demand of the public, but also of increasing the revenues of the state. This problem is especially acute at the present time. During the first 3 years of the 5-year planning period collection of the turnover tax on consumer goods has increased by only 5.2 percent. In a number of ministries and departments the share of these goods in the total volume of production has for all practical purposes not grown at all in recent years. Many enterprises and associations do not concern themselves with producing such products at all. At the enterprises of Mintyazhmash, Minselkhozmash, and Minkhimmash the output of consumer goods amounts to only 20 kopecks per ruble of the wage fund, which is considerably lower than the average indicator for machinebuilding.

A sizable portion of price supplements on new goods of improved quality remains at the disposition of enterprises. At present, this incentive mechanism has not taken hold very well. The production of goods bearing the symbol "N" (excluding light industry) has been concentrated mainly in enterprises of Minlesbumprom and Minpromsvyazi. All other industrial ministries produce only 11.8 percent of the goods whose quality has been improved. There has also been a drop in the output of these goods at enterprises of USSR Minlegprom. In AzSSR Minlegprom their share is only 6 percent and is continuing to drop. The situation is similar in TaSSR. Calculations show that a 1-percent increase in the production of such goods in the country as a whole yields about 100 million rubles of additional revenues.

The low quality of consumer goods is resulting in large costs to correct defects. In USSR Minlegpishchemash they run to millions of rubles. For example, the expenditures of the Kirov "Elektrobytprapor" Plant to correct defects in the washing machines they produce have reached nearly 40 percent of their value.

Particular attention has been paid in the 1988 budget to supplying financial resources for further development of the agroindustrial complex and to achieve the targets of the Food Program. The appropriation to finance the branches of the agroindustrial complex is 173.2 billion rubles, or more than a third of all the investments in the economy. The appropriation from the budget will be 94.6 billion rubles. In order to create stable conditions for obtaining a guaranteed yield of grain crops and other farm crops, 10.3 billion rubles of funds from the budget are being appropriated to finance the development of irrigation and drainage.

In keeping with the growing purchases of agricultural products and deliveries of equipment and fertilizers, state subsidies have been envisaged in the amount of 73.4 billion rubles. At the same time, 14.1 billion rubles are being allocated to finance planned outlays for construction and maintenance of housing and facilities for social and cultural services, to build and repair roads on kolkhozes and sovkhozes operating at low profitability, to pay supplements to purchase prices of farm products to them, and also to pay insurance payments.

The agroindustrial complex possesses a very large production potential. The change in economic conditions and methods of conducting economic activity is gradually changing the rural situation as well. Economic ties are being strengthened with processing branches and other entities within the complex. More and more farms are undertaking to achieve stable profitability.

Many kolkhozes and sovkhozes, by making astute use of the new forms for the organization of production and work, the brigade and family contracts in particular, are conducting their business in a knowledgeable and economical way, and they are achieving effective use of the production potential to increase yields, productivity, and ultimately the profitability of production. Reduction of unproductive losses and outlays in raising, harvesting, and storing the product is one of the basic ways that exist for a sharp rise in the profitability of production and is an indispensable condition for all kolkhozes and sovkhozes to make the transition to self-support and self-financing.

But the unused potential in the agroindustrial complex is not being fully mobilized. Poor use is still being made of the possibility of improving the supply of high-quality foodstuffs to the public, for increasing the profitability of kolkhozes and sovkhozes by selling some of the products they produce on kolkhoz markets. The share of such products is only 1-2 percent in many oblasts.

The process of restructuring is going slowly in the processing branches. Targets for their development are regularly going unfulfilled. The activation of the fixed capital of these branches has been lagging behind the growth of agricultural output.

In 1988 more than 7 billion rubles are being appropriated from all sources of financing to reinforce the material and technical base of the processing branches. It is indispensable to use that money with maximum effectiveness. Improvement of financial relations within the agroindustrial complex must also help in solving this problem. The financial mechanism set up in the sector must link into a unified whole the economic interests of kolkhozes, sovkhozes, and processing enterprises and must orient them toward achieving the ultimate goals—satisfaction of the needs of the public for high-quality foodstuffs and the needs of light industry for first-grade raw materials.

Agricultural and industrial enterprises and other organizations of RSFSR, BSSR, LaSSR, LiSSR, ESSR, and a number of oblasts in other republics, unified to make up a single complex, are making the transition to full cost accounting and self-financing in 1988. Improvement of the economic mechanism in the agroindustrial complex is being called upon to place its economy on the rails of true cost accounting. Such concepts as profit and production cost must take on their true meaning for all components in the complex, so as to strengthen their mutual responsibility for the results of their effort.

The spread of self-employment and operation of cooperatives is conducive to fuller satisfaction of the needs of the public for goods and services and to increasing the rate of employment in socially useful activity and a growth of worker income. Self-employment was permitted even earlier. At the same time, up to mid-1986 the number of self-employed persons was only 78,000 in the country as a whole. With adoption of the Law on Self-Employment it has increased sharply. It has also been promoted by a drop in the rates of the income tax. Aside from that, for many types of activity it is now allowed to acquire a patent in advance without paying taxes, which frees individuals and financial authorities of a number of obligations related to keeping income records, filling out declarations, etc. In spite of a drop in the tax rates, the inflow of revenues to the budget, because of the increase in the number of self-employed persons, is growing at a rate of nearly 25 percent and has been planned for 1988 in the amount of 92 million rubles. The income tax collected from cooperatives engaged in production or the rendering of services has been set at 2 million rubles.

At the present time there are more than 300,000 self-employed persons. About 10,000 cooperatives have been organized to provide consumer services to the public, to produce consumer goods, to collect and process secondary raw materials, and in the food service industry. But

the effort to organize self-employment and cooperative activity has been proceeding extremely slowly. In a number of places the restrictions in this area have not yet been removed.

Financial authorities need to change their style and methods of work with the public, take every necessary step to guarantee his rights, to strictly observe legality in the process of financial inspection, and must not allow a loss to the interests of the state.

The scale and complexity of the social problems to be solved impose higher requirements on the personnel in the financial system. In every work collective there is a need to create an atmosphere of creative work. The head officials of financial authorities need to do everything so that people speak openly and boldly about shortcomings and are not afraid to make suggestions. An atmosphere is needed that would awaken every specialist to work creatively, with initiative and boldly. A situation of enthusiasm needs to be created, people need to be stimulated to do good work, to show initiative, and at the same time there should be strict accountability for lapses.

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Komin on Price Formation, Discipline Under Enterprise Law

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[Commentary by A. Komin, first deputy chairman of USSR Goskomtsen, doctor of economic sciences, on Article 17, Paragraphs 6-11, of the Law on the Enterprise: "Finances and Prices"]

[Text] The Law on the State Enterprise (Association) [hereinafter "the Law"](1) reflects the basic features of the new economic mechanism. The main thing is giving broad rights to enterprises and guaranteeing their effective independence on the basis of full cost accounting (khozyaystvennyy raschet). It is a question of creating incentives which would stimulate work collectives to do everything to meet the needs of the economy for high-quality products and to manufacture them at the lowest cost.

The Law grants enterprises the right to independently set prices of the particular goods they produce and also to establish negotiated prices in agreement with the consumer.

On 17 July 1987 the CPSU Central Committee and USSR Council of Ministers adopted a decree entitled "On the Basic Directions for Restructuring the Pricing System in the Context of the New Economic Mechanism." It called for carrying out a radical reform of the

pricing system, for interlinked restructuring of wholesale, purchase, and retail prices and rate schedules as a unified whole. The task is being set of creating a qualitatively new price system oriented toward intensification of social production, broad use of economic methods of management, and a strengthening of cost accounting and self-financing.

The Price as the Most Important Economic Normative

The present system of pricing took shape in the context of extensive development of the economy; major shortcomings and disproportions have accumulated in it and have resulted in a diminished role of the price as one of the active economic levers in management of the economy. The prices of many products do not reflect the socially necessary expenditures to produce them, they do not fully take into account performance characteristics and product quality, nor do they have a regulating effect toward balancing supply and demand.

The present price system cannot serve as a reliable point of reference in organizing optimum production and cannot perform the role of a criterion of production efficiency. In some branches, prices guarantee that undeservedly high profit will be obtained, while in others, by contrast, they do not even reimburse production costs.

Prices of fuel and raw material have remained depressed or a long time. For example, the coal industry has still been operating at a loss for more than 3 decades. The price level in the fuel and energy complex does not guarantee its operation on the principle of self-financing. In order to develop these heavy industries the state has been forced to seek sources in other spheres of the economy. At the same time, it has frequently been unprofitable to apply resource-saving technology. Who is going to conserve fuel and energy resources when they are cheap? One obviously cannot judge the effectiveness of technical progress in building diesel engines when the price of diesel fuel at 6 kopecks per kilogram is barely a third of the prices of gasoline and has not changed since the fifties. That would seem to be one of the reasons for the inadequate development of the production of measuring apparatus. In the field of applying instruments to measure consumption of thermal energy and electric power by the time of day we are essentially standing at the very beginning of the road.

This can also be said about the prices of agricultural machines and fertilizers, which are considerably lower than the actual costs of producing them. What kind of efficient use of the new "Don-1500" combines can be expected when its price for agriculture is less than one-third of its production cost?

Economically unsubstantiated approaches to pricing have resulted in the occurrence and rapid growth of subsidies for production and sale of the most widely differing products and services. That is why the Law on the Enterprise (Article 17, Paragraph 6) says that prices

must reflect the socially necessary costs of producing and selling the product, its performance characteristics, quality, and the effective demand. They are used as an active means of exerting pressure toward higher production efficiency, improved quality, and reduced cost of the product (work item, service). An enterprise has an obligation to guarantee the economic justifiability of prices, price proposals, or calculations related to them, a higher growth of effectiveness from the standpoint of the national economy than the growth of costs, and a relative improvement of the cost of the product to the consumer.

The price must be an objective criterion in forming the income of every enterprise so as to take into account reimbursement of costs and the earning of a profit that covers expenditures for social welfare and the development of production, as well as payments into the budget for production resources at the established rates.

Who Is To Set Prices?

The pricing practice that has come into being was adapted to the centralized system of management of the economy in which administrative-command methods were predominant. Breaking down plans to enterprises and economic organizations with respect to all basic value indicators objectively necessitated that prices be set at the center. The decisive role of such value-volume indicators at gross output and commodity output has naturally led to formalism in organizing cost-accounting activity and in the fulfillment of planning targets. The directive nature of the volume-value indicators hampered the initiative of enterprises and their economic and commercial maneuvering in updating their products list and product mix in the interest of better satisfaction of needs.

Now the setting of prices and rate schedules has been concentrated exclusively in pricing authorities, above all in USSR Goskomtsen. It sets the wholesale prices of industrial products for production and technical purposes whose share is greater than 80 percent of the total volume and also wholesale and retail prices on consumer goods which have a share of 60-70 percent in commodity sales. The rest of wholesale and retail prices are set by republic and local pricing authorities.

Granting the right to enterprises to set prices on individual lots and on especially stylish goods has not brought any essential changes whatsoever in the general procedure for setting prices. Negotiated prices represent only 20 percent of the volume of production of consumer goods of the USSR Ministry of Light Industry. Enterprises set the prices on 5 percent of the share of products for production and technical purposes. Enterprises have been setting prices on products which they manufacture on single orders. But even here this was limited to intermediate products, parts, specialized tools, and products for a restricted group of consumers.

In agreement with USSR Minfin, USSR Mintorg, and USSR Minlegprom USSR Goskomtsen has made amendments in the present Regulation on Procedure or Setting Negotiated Prices on the First Experimental Lots of Goods and especially stylish products and on the differentiation of trade discounts. Restrictions on the size of lots of products for children and also durable consumer goods, housewares, and furniture have been removed. The volume of output of these products will be determined in agreement with organizations in the trade sector (previously the first experimental lots could not exceed 100,000 rubles when the negotiated unit price of the product was not greater than 10 rubles; 200,000 rubles at a price higher than 10 rubles, but no greater than 50 rubles, and so on).

The ban whereby negotiated retail prices could not be set on fundamentally new durable consumer goods and housewares being produced for the first time has been removed.

The managers of production associations (enterprises) and fashion houses in the system of USSR Minlegprom are now allowed to set prices of particularly stylish products they produce independently (without clearing it with organizations in the trade sector).

The procedure for setting wholesale prices (on products at negotiated prices) has been simplified substantially (for instance, the list of commodity groups to which the rates of the turnover tax are applied has been considerably lengthened; a single wholesale price is set regardless of the size of trade discounts extended to various purchasers. Should the negotiated prices be lowered, when the first experimental lots of the commodities and especially stylish goods are delivered to several organizations (enterprises) in the trade sector, their remainders are revaluated only in those trade organizations in which demand for those products has fallen off.

Uniform retail prices may be set on goods by agreement between the parties (between industry and the trade sector) with no differentiation based on proportions and growth. Previously that kind of differentiation was mandatory in settlements.

Article 17, Paragraph 7, of the Law stated that an enterprise is to sell its products (work items, services) at prices (rate schedules) set centrally, but also by agreement with the consumer or independently.

This radically alters the present pattern of distribution of rights concerning the setting of prices.

The decree referred to of the CPSU Central Committee and USSR Council of Ministers dated 17 July 1987 provided that negotiated prices and rate schedules be set by ministries, departments, and manufacturing enterprises in agreement with consumers of products for production and technical purposes manufactured under

single and individual orders, on new products or products being put into production for the first time, on new nonproduction consumer goods, and also on certain types of foodstuffs being sold by associations and enterprises in agreement with organizations in the trade sector, for a period not to exceed 2 years on the basis of a list determined by the USSR State Committee for Prices, and products of scientific research and project planning and design organizations, agricultural products purchased from individuals, and products purchased and sold by cooperative organizations, and other products (work items, services) envisaged by legislation.

Thus any product can be turned over to an enterprise for it to set prices in agreement with the consumer, including products intended for volume and series production. Probably the right should be transferred not only to set negotiated prices on intermediate products, assemblies, and components, but also on end products, including new machines and equipment intended for a relatively narrow market and consumer goods by direct agreement with organizations in the trade sector.

The granting of enterprises broad rights to set negotiated prices does not signify that centralized state guidance of this most important area of the economy is being renounced, but its methods are undergoing essential change. Whereas up to now they have come down to the centralized setting of prices, in the new context normatives and instructions on methods of establishing them will be advanced into the first place along with analysis of the dynamic behavior of prices and oversight as to the observance of state discipline. At the same time, pricing authorities, ministries, and departments will as before set prices centrally on the most important products which are determining in formation of price levels (fuel, energy, the most important raw materials and supplies, as well as finished products consumed throughout the entire industrial sector or the entire economy).

It would be advisable to transfer to ministries the right to set prices on products for which there is a monopoly of either production or consumption. For example, the prices of agricultural machines must be set by the ministry in agreement with USSR Gosagroprom and the prices of equipment and rolling stock for the railroads in agreement with the USSR Ministry of Railways, the prices of power engineering equipment in agreement with USSR Minenergo, and so on.

The decree of the CPSU Central Committee and USSR Council of Ministers dated 17 July 1987 provided that prices and rate schedules would be set on products, goods, and services as a function of their national economic and social significance by the USSR Council of Ministers, the USSR State Committee for Prices, ministries and departments, councils of ministers of union and autonomous republics, and ispolkoms of local soviets of people's deputies. Such prices are set on the most important products along with the drafting of the state plan.

Aside from centrally set and negotiated prices, provision has been made for independently established prices and rate schedules. They are established by enterprises on products for production and technical purposes and agricultural products, consumer goods, and services to which centrally established prices do not apply, and also on products and services for internal consumption or sold within the producer's own trade network. This applies first of all to new products which will be sold by enterprises through their own trade network, to products and services for internal use within the association or enterprise, or for the organization's own capital construction.

Prices to be determined on the basis of normative-parameter price lists are also set independently. Such price lists are now applied widely in setting retail and wholesale prices of consumer goods (for example, sewn articles, furniture, dishware, and so on) and in setting wholesale prices of such important products as rolled metal goods. Practice will continue in the future to be pursue the line of expanding those price lists. But it is advisable to grant to enterprises the right to depart from the prices calculated on the basis of the normative as a function of demand, fashion, or other requirements of the market. Such supplements to prices must, of course, be cleared with organizations in the trade sector.

Is There a Reason To Be Afraid of Negotiated Prices?

As full cost accounting and self-financing, wholesale trade in the means of production, and direct long-term economic ties develop, the sphere of application of negotiated prices and also of prices set independently will broaden. Will the process of management of pricing get out of control because of this? This is not an idle question. Especially since the experience of using negotiated prices in certain socialist countries has led to a strengthening of inflationary phenomena and a rise of prices.

As a matter of fact, negotiated prices make the process of pricing more dynamic so as to take into account the conditions on the market and the demand of consumers. It is well-known that dynamic prices have always involved a general upward trend. It seems impossible, then, to invent a mechanism that would guarantee the universal "pursuit" of low prices. This is equivalent to the search for the perpetual motion machine. Without going into the reasons for this, one practical conclusion can be drawn: the application of negotiated prices will unconditionally mean that they will rise. Pricing authorities must foresee this and prevent the negative phenomena that lie at the base of that growth. In their economic content negotiated prices have many advantages over prices set administratively by superior organizations. First of all, the negotiated price better combines the economic interests of the producer with those of the consumer. As a form of value and as an expression of socially necessary costs of the product's production the

price carries the most important information for formation of social needs and demand. The more accurate and objective that information, the better the linkage that can be established between production and consumption, and the more economically sound are the needs that are formed.

At the same time, negotiated prices are conducive to an increase in the economic accountability of the producer and consumer not only for the price level, but also for the product delivered, for its quality, for its performance characteristics, and for its technical level. Given the widespread introduction of contract relations between the manufacturer and consumer, the setting of prices cannot be eliminated from the entire interrelated set of economic problems arising in this connection.

The application of negotiated and independently set prices must be accompanied by the drafting and adoption of appropriate instructions, methods, and normatives and also by definition of a straightforward list of the products for which enterprises have the right to set prices. Standard rates of profitability and appreciation of the economic benefit, performance characteristics, and consumer demand and requirements take on fundamental importance in this connection.

Negotiated prices will be introduced on an ongoing basis as the necessary economic conditions are brought about for this. This includes overcoming the shortage and strengthening financial operations. It is not possible to apply negotiated prices widely when the channels of the circulation of money are oversaturated. This could cause a general rise of prices, especially in the context of the producer's monopoly over production and delivery of the product. These are the general problems to be solved by the new economic mechanism. As they are solved, the conditions will also be created for applying negotiated prices.

The Price and Full Cost Accounting

Article 17, Paragraph 4, of the Law states that the enterprise shall be required to operate without a loss. When operation at a loss is planned on a temporary basis, the enterprise is financed by the superior body out of centralized funds and reserves up to the limit of the subsidy established in the 5-year plan, which is subject to progressive reduction. The enterprise is required to draft measures to strengthen its financial condition, to see that production of the product or performance of the work item or service ceases to be done at a loss within the established period, and to guarantee profitable operation. Prices have a direct relation to the results of economic activity. Prices which have been hiked up unjustifiably will cover any mismanagement, and on the contrary, low prices create conditions for operation at a loss.

Now 13 percent of all enterprises in industry are operating at a loss, and the sum total of their losses amounts to more than 5 billion rubles. One of the reasons for this situation is the imperfection of prices. The finances of enterprises operating at a loss means a direct deduction from the national income created at profitable enterprises, and ultimately this is reflected in the standard of living.

Under the new conditions economic accounting must take on a completely different economic content. Such terms as full cost accounting, self-support, and self-financing must not come down only to a different distribution of profit at stable rates in order to guarantee enterprises their own basis for expanded reproduction and retooling. The main thing is to create a cost-accounting mechanism which would inevitably result in a rise in production efficiency.

Whereas earlier cost accounting was limited to fulfillment of planning indicators for profit and reduction of production cost, under the new conditions all material incentives would be made dependent upon the final results, and they are economically measured in terms of profit. Full cost accounting is aimed at raising production efficiency not only by reducing the production cost of products already being produced, but also that of highly efficient new products, and this in fact is where the principal potential is to be found. The raising of efficiency is first of all related to the updating and assimilation of new equipment, the improvement of quality; in other words, it depends on technical progress. Here again the economic role of prices is manifested as an active lever in the stimulation of technical progress and an objective standard reflecting its efficiency.

The present practice of applying supplements for efficiency, although it has had a positive effect on motivation of enterprises to put products into production bearing the Quality Emblem, has still not brought about essential shifts in technical progress. Confirmation of the economic benefit has frequently been given irresponsibly and moreover by organizations and enterprises which were not the actual consumers of the future new product.

Expansion of the practice of setting negotiated prices is essentially altering the situation in this area, uniting the interests of the producer and the consumer. The setting of negotiated prices on products for production and technical purposes, on machines, and on other major equipment must begin with issuance of the technical assignment for design and production of new technology. The customer ordering such equipment should not only specify the technical-and-economic parameters of the new product, but also agree to an acceptable price at which it could be used efficiently in production. That price is the limit price. Its economic content is above all the efficiency of the consumer's use of the product.

A procedure has to be set up for establishing limit prices and negotiated prices that would not drive the producer to hike up prices on the basis of high costs. The previous pricing practice precisely encouraged exactly that kind of hiking up of prices. That was one of the reasons that resulted in cost-basis pricing. Under the new conditions prices must be determined not by costs, but by the economic benefit. The greater the economic benefit, the higher the prices should be. It is indispensable here to determine them relative to the unit of usefulness (capacity, productivity, load capacity, and other indicators).

Once the limit price has been set, the designer need no longer be concerned about preserving that price on the basis of "high costs." The limit price must figure as a firm guarantee of the future price if he delivers product quality in accordance with the conditions specified. In this case, the obstacles are removed that would hinder the mechanical engineer and designer from creating an inexpensive product. The limit price must be preserved when the product is set up for production. The saving from use of the most progressive technology must remain with the enterprise that is the producer of the new product.

Transformation of the limit price into the wholesale price if the product meets the quality and assigned technical-and-economic parameters also frees enterprises in reducing the production cost of this product. This procedure for setting limit prices and transforming them into wholesale prices is an important condition for application of cost-fighting principles of pricing. For many products, especially consumer goods, there is no need to set limit prices in advance. But before their production begins, prices must be cleared with the product's consumer or with organizations in the trade sector.

In the course of the product's production and sale, if the product's technical characteristics and quality are not confirmed, or this product is not in demand, the consumer (organization in the trade sector) is entitled to raise the issue of reducing its price. This price reduction must be made at the expense of the economic activity of producers. Pricing flexibility and the vigorous economic role of pricing, which is related above all to the producer's responsibility for the quality and technical level of the product produced, will be manifested in precisely this fashion.

In the context of that pricing procedure all the profit resulting from manufacturing a product that is economically efficient on the basis of all factors (both reduced costs and also the efficiency of its use by the consumer) will be concentrated in the hands of the producer. This is an important element of cost accounting. Whereas earlier a growth of profit by reducing production costs on a product already being produced was encouraged, under the new conditions it will also be encouraged by putting a highly efficient new product into production. This is, of course, a more powerful source of higher efficiency.

Article 11, Paragraph 2, of the Law states that an enterprise shall sell a product whose parameters meet the highest world achievements or exceeds them at higher prices. An enterprise pays reductions from wholesale prices for manufacturing outdated articles and products of substandard quality and shall also be financially liable for the irreversible losses in the cost-accounting income of the collective, wages, and social benefits.

Price Discipline

Observance of state price discipline is an objective necessity of planned pricing in a socialist economy. Committing large-scale price violations in management of the economy amounts to slowing down its development and starting out on the road of inflation, disproportions, and shortages. That is why the Law (Article 17, Paragraph 8) states that an enterprise shall be responsible for strict observance of price discipline and is under obligation not to allow prices to be hiked up. The profit an enterprise obtains unjustifiably through a violation of state price discipline, failure to meet standards and technical specifications, shall be subject to confiscation into the budget (out of the collective's cost-accounting income) and shall be omitted from reported data on plan fulfillment.

This economic penalty has been in effect already. But now it has been considerably strengthened: enterprises that hike up prices and obtain unjustified prices shall also pay into the budget a penalty in the amount of the profit obtained unlawfully out of the cost-accounting income of the collective. When the producer hikes up prices of a product (work items, services), the consumer has the right to dissolve the contract concluded for its delivery.

Much attention has been paid in recent years to increasing the effectiveness of oversight over observance of price discipline. There has been an increase in the number of inspections which pricing authorities have been conducting jointly with authorities of USSR Gosstandart, USSR Minfin, USSR KNK, and other monitoring bodies and public organizations. USSR Goskomtssen and the AUCCTU are conducting joint measures to strengthen state and public monitoring of the observance of price discipline in the branches of the sphere of services to the public.

In 1986 alone 465,000 trade and food service enterprises, 115,000 enterprises rendering consumer and municipal services to the public, and about 10,000 industrial enterprises were inspected.

Inspections by pricing authorities of the state of price discipline in the sectors of the economy have been showing that the situation is not taking shape satisfactorily in this area. Pricing authorities confiscated as a state

revenue 110.1 million rubles in 1985 and 107.6 million rubles in 1986 from enterprises that obtained unlawful proceeds as a consequence of violation of state price discipline.

Some managers in the economy resort to flagrant violations of state price discipline, "improve" the performance indicators of enterprises, and obtain undeserved benefits by selling products at prices which have been hiked up unlawfully.

For instance, in the Ivano-Frankovsk Production Association "Karpatpressmash" of USSR Minstankoprom the profit from hiking up prices was 66.9 percent, and in the Production Association "Kubanvodremmash" of USSR Minvodkhoz it was 64 percent. At the Baku Electro-thermal Equipment Plant of USSR Minelektrotekhprom the profit obtained unlawfully was 564,000 rubles, or 5.1 percent of total profit. At the Penza Diesel Locomotive-Building Plant of USSR Mintyazhmash it was 403,000 rubles, or 3.7 percent. At the Vilnius Electrical Measuring Equipment Plant of USSR Minpribor it was 284,000 rubles, or 4.2 percent. Spot checks of individual enterprises alone resulted in confiscation of 1.1 million rubles into the budget in 1986 from USSR Minpribor, 1.4 million from USSR Mintyazhmash, while 2.2 million were collected in 1985 and 1986 from USSR Minelektrotekhprom. Flagrant violations of state price discipline were discovered at enterprises of USSR Minstankoprom producing forging and pressing equipment. At 26 enterprises of this ministry more than 20 million rubles of profit illegally obtained by hiking up prices were confiscated into the budget.

In January 1987 cases when less food than required was put in prepared dishes and culinary and confectionery products, short weights, overstating the grade, improper use of price supplements, and so on, were discovered at almost 1 out of 2 in a total of 345 food service enterprises checked in Moldavian SSR. Cases of stealing food and of short weights and short counts given to students and children are particularly disturbing. When inspections were made at 23 school dining rooms in the city of Ufa in Bashkir ASSR, flagrant violations of price discipline were discovered in 95 percent of them.

Ministries and departments do not always apply the measures envisaged against violators of price discipline. For example, USSR Minavtoprom, which in 1985 checked 26 subordinate enterprises, did not invoke economic penalties against a single one of them. Pricing authorities which made a return inspection of just six of these enterprises were forced to confiscate as a state revenue profit they had obtained illegally in the amount of 405,000 rubles.

This attitude of ministries is not conducive to a strengthening of discipline and order, it promotes figure padding and distortion of the idea about the actual state of affairs, it holds back development of production, and it is giving rise to other negative consequences.

Once the question of confiscating profit obtained from hiking up prices is settled, there is a sharp deterioration of the financial condition of enterprises. Previously, ministries rendered them assistance, and also the confiscation was sometimes not fully carried out. Under the Law these losses must now be covered out of the cost-accounting income of the collective.

That is why strict observance of price discipline must become the concern of the entire collective of the enterprise and of its council. Article 17, Paragraph 9, of the Law notes that the enterprise is under obligation to be guided by prices (rate schedules) set centrally on products (work items, services) and also by prices set by ministries and departments.

It is indispensable to strengthen the monitoring effort of pricing authorities and to improve the methods and forms of its organization. This effort should be conducted jointly with other ministries and departments, the USSR People's Control Committee, USSR Minfin, and the AUCCTU. It is a question of creating a unified system for monitoring observance of state price discipline.

Footnote

1. The numbering of the articles is not followed in publishing comments on the Law. This makes it possible for the comments to promptly reflect the content of new normative acts adopted to implement the Law.

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Oil Processing Industry Financial, Investment Plans Viewed

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[Article by G.V. Zhuk, chief of the Financial Administration of USSR Minneftekhimprom, candidate of economic sciences: "Funding and Credit Financing of the Technical and Social Base"]

[Text] The Basic Principles of the Radical Restructuring of Management of the Economy, adopted by the June (1987) Plenum of the CPSU Central Committee, set the task of "creating on the basis of full cost accounting (khozraschet), self-support, and self-financing an up-to-date economic mechanism for the activity of the enterprise, one that guarantees effective internal incentives

for its development, one which provides the motivation to work for the consumer, to do everything to conserve resources, and to apply extensively the advances of science and technology."

Self-financing is being called upon to provide a combination of centralism in management with the independence of enterprises. The effectiveness of this approach has been confirmed by economic experiments conducted in the industrial sector. The ministries converted in 1987 to the new economic methods of management included the USSR Ministry of Oil Refining and Petrochemical Industry.

The efficiency with which financial resources are used depends to a considerable degree on the forms and sources of financing capital investments, science, and new technology, social measures, on selection of the purposes and investments of financial resources, and on the character of the cost-accounting relations of enterprises and the ministry with the institutions of banks. And this ultimately affects the time frame and results of efforts toward the retooling and reconstruction of enterprises and the improvement of the social welfare and living conditions of work collectives.

Centralized sources—budget appropriations and those resources of the branch itself which were also used according to a centralized plan were the predominant form for financing capital investments and scientific-technical progress before associations and enterprises were converted to full cost accounting. The resources of enterprises themselves did not exceed 10 percent of the total volume of capital investments, and scientific research and development of new technology were entirely financed from the centralized fund. Experience has repeatedly confirmed that when financing is non-reimbursable there is less economic motivation to speed up the process of reconstruction and construction and the attainment of rated output at new capacities. Enterprises were not interested in conserving the resources received on a centralized basis, but in spending them to the last ruble, since resources left unused during the year would be taken away from them, and the new ones would be allocated on the basis of what they spent. To a certain extent this contributed to the freezing of resources in the form of unfinished construction.

In the present stage, when the task has been advanced to the foreground of increasing operating efficiency on the basis of intensification, changes are needed in the mechanism for putting financing pressure on enterprises, and the role of "own" financial resources in retooling, reconstruction and construction of housing and social service facilities needs to be enhanced. As enterprises make the transition, then, to self-financing, the share of "own" resources of enterprises committed to financing capital investments must become predominant. Table 1 shows the proportional distribution of sources of financing of associations and enterprises of USSR Minneftekhimprom in the 12th FYP.

Table 1 (in percentage)

Sources	1987	1988	1989	1990
Industrial construction	100.0	100.0	100.0	100.0
Breakdown				
Appropriations from the budget	2.7	4.7	4.2	6.0
Centralized fund for development of production, science, and technology	8.9	9.3	10.0	8.4
"Own" fund for development of production, science, and technology	61.3	61.6	82.6	82.6
Resources within the economic entity	6.0	3.8	3.2	3.0
Bank credit	21.1	20.6	—	—
Nonindustrial construction	100.0	100.0	100.0	100.0
Breakdown				
Appropriations from the budget	1.0	4.4	4.5	5.2
Centralized fund for construction of social service and cultural facilities and housing	19.1	16.2	14.0	11.0
"Own" fund for construction of social service and cultural facilities and housing	73.4	76.2	81.5	83.8
Bank credit	6.5	3.2	—	—

The development of cost-accounting relations in the branch in the context of self-financing presupposes continuing efforts to improve the proportional distribution of sources of financing of capital investments; one way of doing this is to increase cost-accounting forms of financing. For example, the shortage of "own" financial sources amounting to more than 100 million rubles of the Belotserkovskiy Production Association for production of tires was made up in 1987 with long-term credit which is to be subsequently repaid out of "own" resources. Consequently, the financing of capital investments from enterprises' own resources strengthens an important principle of cost accounting such as self-support.

The process of self-financing cannot be deepened without the relevant economic prerequisites and conditions. After all, the self-support of associations in the petroleum refining and petrochemical industry requires large one-time capital investments. For instance, the cost of an installation for production of liquid paraffins is about 70 million rubles, but the annual fund for development of production of the enterprises where they would be located is considerably less than that. Given that situation, some enterprises do not have the resources, but they do have the need, while others do not have the need, but they have a surplus of resources of their own.

On behalf of balance between capital investments and financial resources, then, so that the needs of the national economy for indispensable products can be satisfied promptly, a mechanism has been created in the branch for optimum utilization and distribution of financial resources. This mechanism includes the creation of differentiated standard rates for the formation of economic incentive funds of enterprises

and for formation of the centralized fund for development of production, science, and technology, combined with the use of long-term credits. Given this situation, the circulation of profit and appreciation committed to production purposes and social welfare purposes of enterprises takes place entirely within the branch through the centralized reserve fund of the ministry. And the participation of finances in the process of reproduction is manifested in the ratio between distribution and redistribution of branch income and the commitment of necessary resources to the production sphere and nonproduction sphere.

This redistribution of financial resources takes place by means of established stable rates which are differentiated in the preplan of the process of reproduction.

The large number of purposes for redistribution of resources by all-union industrial associations and the ministry which were previously in effect and were related to improvement of the structure of capital investments within the branch, the financing of scientific research projects, the building up of reserves for economic incentive funds, and the rendering of financial assistance, has been replaced by a single channel for centralization of money resources at rates which are individual, but are stable for the 5-year planning period. All other confiscation and redistribution of other resources is excluded.

In the formation of the centralized fund and ministry's reserves the problem arose of how that fund was to be formed. Two alternative versions were examined. The first: all enterprises participated in formation of the fund at a uniform rate regardless of their financial condition and profitability; the second: transfers to the fund were made only by the group of highly profitable enterprises. Had we chosen the first version, a number

of enterprises would have been exempted from payment of the charge on assets and would have been allocated subsidies, while others would have had a high assessment of payments into the budget. And this would have had an adverse effect on motivation to obtain above-plan profit. By concentrating centralized

resources in the group of highly profitable enterprises we are largely eliminating this problem.

The grouping of the ministry's enterprises with respect to the level of profit distribution rates was as shown in Table 2.

Table 2 (in percentage)

Rates of Deductions From Calculated Profit of Enterprises	Number of Enterprises	Total Profit	Profit Left to the Enterprises
10-30	21.4	51.3	18.9
30-40	13.3	15.2	13.4
40-60	24.3	17.4	34.0
Above 60	41.0	18.7	34.1
Total	100	100	100

Under the conditions which have been created a number of associations and enterprises do not have sufficient incentives for increasing profit by overfulfilling the targets of the 5-year plan, since out of every additional ruble of profit they earn only 10-30 kopecks remains with them. These enterprises represent 51.3 percent in the branch.

The question arises: Given the standard rates established for the 12th FYP, how are highly profitable enterprises to be motivated to look further for financial sources? In order to guarantee in practice that resources are earned and that the rates of profit distribution are stable, it has been proposed that profit within the limits of the targets of the 5-year plan be distributed at the rates established. As for profit obtained over and above the targets of the 5-year plan, it would be distributed in the same way as incentive supplements to prices of products bearing the Quality Emblem, i.e., 70 percent would go to formation of economic incentive funds of enterprises.

In our view, use of this system of rates in the transitional stage would furnish in good time financial resources for the capital investments which have been planned in the 12th FYP, and additional financial reserves would be created as a function of the operating results at a rate that would be the same for everyone. The scheme proposed is postulated on economic fairness and gives enterprises confidence that better achievements will be rewarded in like fashion.

We will examine in more detail the question of that portion of the fund for development of production, science, and technology which is built up from deductions for depreciation. Placement of responsibility on

enterprises for simple reproduction of fixed capital still does not mean that they must dispose of the entire depreciation fund. Experience in calculating the rates for formation of funds has shown that it is altogether sufficient for most enterprises to have at their disposition only a certain portion of depreciation for restoration of fixed capital.

No precise quantitative criteria have been devised for differentiation of the rates of deduction from enterprise to enterprise as yet; what is more, some enterprises use the fund for development of production, science, and technology to finance only retooling and reconstruction, while others use it also for expanded reconstruction and repayment of long-term credit taken earlier. That is why those enterprises carrying on expanded reproduction of fixed capital, enterprises which have built up fixed capital with bank credits (which have to be repaid), and also enterprises operating at low profitability as a rule commit 100 percent of depreciation deductions for restoration to the fund for development of production, science, and technology. For the other enterprises the deductions from depreciation into their funds are made at lower percentages. Here our point of departure is the following principle: transfers from depreciation to the fund for development of production, science, and technology must not exceed the volume of capital investments intended for retooling and reconstruction under the 12th FYP, and the other part of that fund must be built up out of profit.

It should be noted here that it is not always correct to structure the rates on the basis of today's needs. This especially applies to capital-intensive branches such as

the petroleum refining and petrochemical industry. It is evident that the "peaks" of the volume of capital investments, related to radical reconstruction and expansion of production, must be financed out of the branch's centralized resources. This only increases the stability of the economic normatives. Given that situation, resources sufficient for renewal (in terms of value) of the active part of fixed capital must be left at the disposition of the enterprise. An analysis of material on devising economic normatives has made it possible for us to draw the conclusion that the enterprise does not as a rule need the full amount of depreciation deductions for replacement to maintain the simple reproduction of the active part of fixed capital through retooling and reconstruction. That is why the status of the depreciation fund at any date will exceed the need for financial resources to make up for the means of labor which have been retired because of their physical wear and obsolescence.

As for the financial source of simple reproduction of the active part of fixed capital, it must be turned over to the direct disposition of the enterprise. The effectiveness of renewal of the active part of capital requires day-to-day decisions right at the enterprise, where the plan for retooling and reconstruction can be drafted with good knowledge of the specific production situation.

As for depreciation deductions intended for renovation of the passive part of fixed capital, they must be taken away from enterprises and credited to the ministry's centralized fund. This proposal has also been confirmed by the fact that amounts of depreciation deductions for restoration of the passive portion of fixed capital coincides almost entirely with the total depreciation deductions credited to the ministry's centralized fund (see Table 3).

Table 3

	1987	1988	1989	1990
Depreciation deductions for restoration of the passive portion in the ministry, millions of rubles	310	380	410	480
Depreciation deductions credited to the centralized fund for development of production, science, and technology, millions of rubles	329	403	423	503

In all specific cases a differentiated approach is needed for determination of the real needs of enterprises for financial resources to maintain simple reproduction of the active portion of fixed capital. This means that it is also necessary to take into account the degree of physical wear of fixed capital from enterprise to enterprise. As the extent of the physical wear of fixed capital increases, there is also an increase in the likelihood of its retirement (other conditions being equal), and this in turn increases the need for financial resources to replace the fixed capital retired. At a new enterprise the need for depreciation to replace physically worn-out implements of labor is, of course, comparatively less.

Proceeding from this indisputable premise, in establishing the rates for formation of funds for development of production, science, and technology we should also take into account the degree of wear on fixed capital. This is in fact done in practice. For example, the "Krasnyy Treugolnik" PO, the "Krasnyy Bogatyr" PO, the Baku, Yerevan, and Yaroslavl tire plants, and many other enterprises with old equipment have been left 100 percent of depreciation deductions.

The rightness and possibility of taking away from enterprises a portion of depreciation deductions for centralized use has also resulted from the specific nature of the movement of the value of fixed capital: it is gradually passed over to the value of the product, and as the latter is sold, it accumulates in the depreciation fund. Until the

need arises to replace fixed capital that is worn out, the depreciation fund can also be used for other purposes. Under those conditions situations arise when some enterprises will have a large reserve of uncommitted depreciation deductions, while others, which have a high share of wear, will have a shortage of resources for retooling and reconstruction. The need and possibility arise, then, right in the branch for current regulation and temporary redistribution of financial resources for purposes of increasing the efficiency of their utilization.

Application of this principle in devising the standard rates for formation of funds for development of production, science, and technology of petroleum refining and petrochemical enterprises in the 12th FYP has made it possible to reduce their aggregate size by about 300 million rubles on an annual basis.

The size of the fund for development of production, science, and technology in enterprises is determined by computation in 5-year plans (broken down by years) and annual plans by multiplying the value of each of the fund-forming indicators envisaged in the plan by the corresponding rate. Proceeds from the sale of retired property and also resources the enterprise receives from the centralized fund of ministries are also added to the fund. The resources of the enterprise's financial reserve, a portion of resources received from other enterprises for their use of scientific and technical development, and a portion of profit from sale of products manufactured from production waste may also be credited to this fund.

The resources of the fund for development of production, science, and technology are not subject to redistribution. On the contrary, associations and enterprises are stimulated to build them up for performance in subsequent planning periods of effective measures in that bank institutions will be paying them interest on those resources. This is in fact understandable; after all the resources are not dropping out of economic circulation. The bank uses them as a resource for credit financing.

Enterprises use the resources of the fund for development of production, science, and technology independently on the basis of an advance estimate. The draft of

the advance estimate of expenditure is put up for discussion by the work collective of the enterprise, and after its approval it is adopted by joint decision of the management and trade union committee and is appended to the collective agreement. The management must inform the workers and employees about performance of that advance estimate at the intervals envisaged by the collective agreement.

The resources of the fund for development of production, science, and technology are committed to financing outlays for the retooling, reconstruction, and expansion of existing production (see Table 4).

Table 4 (in percentage)

	1986	1987	1988	1989	1990
Retooling	25.9	37.1	32.5	35.3	52.6
Reconstruction	13.2	16.0	20.4	24.6	27.0
Expansion of existing production	60.9	46.9	47.1	40.1	20.4
Total	100.0	100.0	100.0	100.0	100.0

It is evident from the figures given that by the end of the 12th FYP the share of retooling and reconstruction will increase 2.7-fold and will amount to about 80 percent of the volume of capital investments.

The financing of scientific research projects and new technology plays an important role in speeding up scientific-technical progress. In 1979 our industry was converted to the cost-accounting system of organizing projects for creating, putting into production, and applying new technology on the basis of job orders (contracts), and scientific research organizations are making the transition to self-financing as of 1 January 1988. The unified fund for development of science and technology (YeFRNT), built up at a rate (0.9 percent) applied to the volume of marketed output, was created for financing. Since the resources of the YeFRNT were branchwide and were entirely taken back if there was a savings on them or they were unused, associations and enterprises frequently looked upon these resources as an additional benefit, they used them inefficiently or they committed them to correcting shortcomings in economic activity, and the efficiency of new technology dropped off as a result.

Under the new conditions of operation a substantial portion of the resources of the unified fund has been included in the resources of the fund for development of production, science, and technology, and their proportion has been made directly dependent on the profit of associations and enterprises. They will be motivated, then, to finance only those scientific development projects which afford the maximum economic benefit. Aside from that, the fund is used as follows:

i. to finance outlays for preparation and organization of production of a new and modernized product, the making of experimental prototypes, and the introduction of progressive production processes;

ii. to conduct R&D projects (including acquisition of licenses), to finance outlays to acquire equipment, instruments, and other merchandise and supplies;

iii. to compensate the production costs of a new product during the period of its assimilation.

When the rates were being devised for formation of the fund for development of production, science, and technology, provision was made for certain resources for development of subsidiary farming operations, whose share in the total size of funds does not exceed 5 percent.

The resources of this fund are also committed to financing the following:

i. raising the standard proportion of "own" working capital;

ii. outlays for participation in construction, reconstruction, repair, and maintenance of local highways;

iii. creation and expansion of capacities for production of consumer goods and rendering services to the public;

iv. other expenditures under current legislation (including outlays for construction of nonproduction facilities).

The fund for development of production, science, and technology is used to repay long-term and other bank

credits extended to the enterprise, which under current legislation are repaid out of the resources of the fund for development of production, science, and technology.

Table 5 (in percentage)

	1987	1988	1989	1990
Capital investments	45.6	47.4	49.3	51.8
Coverage of planned losses	2.2	1.1	0.5	0.2
Scientific research projects	8.0	7.2	7.6	7.7
Preparation of new products and organization of their production	2.8	2.6	2.4	2.2
Organization and development of subsidiary agricultural operations	1.0	1.0	1.0	1.0
Raising the standard amount of "own" working capital	3.3	2.4	2.1	2.5
Repair and maintenance of local highways	1.8	2.0	2.0	1.8
Repayment of long-term bank credits	18.9	20.4	19.7	18.1
Payment of interest on credits	3.0	2.9	2.7	2.6
Other expenditures	13.4	13.0	12.7	12.5
Total	100	100	100	100

The resources of this fund which enterprises can commit to the financing of capital construction are taken into account by the ministry in the draft of the capital construction plan and are given priority treatment in allotment of limits of construction work and design and surveying work in the proportions represented by the enterprises (taking into account the amount of work to be done by the direct labor method). In so doing, the ministry takes into account the proposals submitted by enterprises in determining in 5-year and annual capital investment plans the volume of construction and installation work and work to be done by construction contractors, and also the dates for activation of fixed capital and production capacities.

Project plans and estimates and title lists for retooling and reconstruction and also for construction of projects of subsidiary farming operations financed from the fund for development of production, science, and technology and from bank credit are drafted by enterprises independently and adopted by their managers.

In order to achieve true economic concern on the part of every worker for the common cause, it is not yet sufficient to create the appropriate economic and legal opportunities for a display of social activity. As experience has shown, these opportunities are realized only with the

and also to pay interest on credits. The proportional distribution of the resources of this fund for USSR Minneftekhimprom is shown in Table 5.

help of a well-adjusted social mechanism in which the driving force is the high level of personal and collective interest of the workers in the end results of their work and in solving many social problems. For example, the actual participation of every person in creation and distribution of the fund for social welfare and cultural programs and housing construction helps to strengthen confidence that affairs are being conducted properly at the enterprise, increases responsibility for the results of operation, and develops a sense of being the master of production.

Work collectives take part in deciding questions of extending material aid for cooperative and individual housing construction and to improve housing conditions. They approve the applications of the workers to whom this aid is given. Here it is recommended that in the drafting of 5-year and annual plans at least 50 percent of the resources of the fund for social welfare development be committed on a priority basis to financing construction of housing and other facilities for social purposes.

For example, the proportional distribution of use of the fund for social development in the tire industry has come about as follows (see Table 6).

Table 6 (in percentage)

	1987	1988	1989	1990
Financing housing construction and facilities for social purposes	54.5	51.3	50.4	49.8
Maintenance of preschool institutions	16.0	18.3	18.6	18.2
Coverage of losses of the housing and municipal service operation	14.1	14.5	14.5	14.0
Maintenance of facilities for social, cultural, and consumer services	3.1	4.1	4.1	4.6
Reimbursement of the difference between release prices and retail prices of agricultural products and fuel	4.6	5.0	4.8	4.7
Other expenditures	7.7	6.8	7.6	8.0
Total	100	100	100	100

At the same time, the very size of that fund will almost double during the 12th FYP from 50.3 million rubles in 1985 to 94 million rubles in 1990. It is evident from the figures given that most of the growth of the fund for social development is committed to financing housing construction. It might also be recommended that in the advance estimate for the fund's use funds be committed so as to take into account the performance of priority tasks for the social development of work collectives, as follows:

- i. construction (in shares) and major repairs of housing, children's institutions, preventoriums, as well as clubs, athletic installations, and other facilities for cultural and consumer services, acquisition of fixtures and furnishings, equipment, apparatus, specialized vehicles for these facilities, etc.;
- ii. performance of health measures, including the purchase of medicine, travel vouchers for rest and medical treatment financed from the resources of state social insurance and the resources of the trade union budget;
- iii. performance of measures in the field of culture, popular education, and physical fitness, acquisition of equipment and supplies for visual propaganda;
- iv. reducing the cost of meals in dining rooms and lunch counters of enterprises and improvement of the nutrition of children in children's sanatoriums, Pioneer camps, and health camps, and also the meals of workers taking a course of treatment in preventoriums;
- v. other purpose envisaged by measures for social development of the work collective.

It has been envisaged by the principles that a portion of the resources of the material incentive fund may also be used for housing construction and social welfare and cultural programs.

Valuable experience in development of competition for high cost-accounting effectiveness has been gained at the Moscow "Krasnyy Bogatyr" PO, which was initiator of the movement for developing and carrying out brigade social accounts on the basis of use of untapped potential in each brigade. The objective possibility of working out brigade social accounts arose because for the first time in the 12th FYP the 5-year financial plan has been broken down to each association and enterprise. This made it possible for the collective of the "Krasnyy Bogatyr" PO to break them down to each shop and brigade. By assuming socialist obligations guaranteeing that the contribution exceeds consumption, the brigade opens up its own socioeconomic account.

The system of material incentives, which is aimed at stimulating those who have made a higher personal contribution to the collective's overall results, also has no small importance. How is that contribution to be evaluated? What are the criteria to be used in evaluation? These matters have paramount importance in the context of self-financing.

Many people have already become accustomed to take it for granted when they receive new apartments gratis, when their children go to kindergartens for a minimum charge, when they travel to Pioneer camps, and so on. But few people reflect in this connection on the question: What is the share of each person's participation in the creation and consumption of socioeconomic benefits? For instance, according to the figures of the "Krasnyy Bogatyr" PO, the average cost of various consumer, social, and cultural benefits is as follows: 1 square meter of housing floor space—200 rubles; one travel voucher—120; the financing of one child in preschool institutions—42; the financing of one child in a Pioneer camp—55; the annual average financing of cultural and athletic institutions on a per-worker basis—60 rubles.

And if earlier profit, production cost, labor productivity, and economic incentive funds were a rather abstract concept for many people, now a majority know that increasing each of the indicators enumerated below by 1

percent affords the following growth of profit for the association: conservation of materials—950,000 rubles; labor productivity—130,000 rubles; increasing the volume of production—170,000 rubles; and reduction of production cost—1.05 million rubles.

Since the association has been assigned a stable rate of transfers to the economic incentive fund of 61.8 kopecks per ruble of calculated profit, any further rise in the efficiency of production affords a corresponding growth of economic incentive funds.

The transition to full cost accounting also requires an invigoration of credit relations. The place of credit in full cost accounting results from the value processes of the circulation of resources in the course of reproduction so as to meet the requirements of the rise in the efficiency of social production. Expansion of the sphere of operation of credit is based on the principles that credit should be repaid and a charge should be collected for its use, and this is in line with the interests of enterprises to steadily increase production efficiency, mindful at the same time of the interests of the entire state.

Long-term investment credit has great importance in strengthening the effectiveness of financial-and-credit levers. The share of long-term credit in sources of financing capital investments in the branch reached 30 percent in the 11th FYP. Long-term credit was used to finance construction of the Achinsk and Mazheyskiy petroleum refineries, the production of ortho- and para-xylools [original reads "xynols"] in the cities of Ufa and Omsk, large tire production facilities in the cities of Bobruysk and Chimkent, and so on.

As is well-known, long-term credit is now granted to perform measures of retooling and reconstruction provided there is the standard efficiency from the standpoint of the national economy and the capital investments can be repaid within the limits of the average standards for the branch. But in the context of self-financing, when the source for repaying the long-term credit is the fund for development of production, science, and technology, appropriate changes must be made in the procedure that now exists for issuing credit. Under the new conditions the principal criterion for issuing credit must be not the benefit to the national economy, but the cost-accounting benefit, since it is this that guarantees prompt repayment of the credit.

Self-financing increases the independence of work collectives, and it broadens democratization in management of production. The importance of management in the sphere of financing capital investments is thereby increased. That is why the further exploration for new forms of funding and credit financing at the level of both the enterprise and also the branch must take into account all the spheres of management. The first of them embraces the ministry as a unified whole. The proportional distribution in the financing of capital investments, the pace, the relationship of financial resources

within the economic entity and the redistribution of those resources are an object of centralized planning and regulation by the headquarters of the branch. Only the ministry is able to determine with the greatest effectiveness and optimality the entire range of matters embracing the functioning of the finance of the branch as an integrated organism.

The second sphere of financial direction embraces regulation of the financial activity of the ministry's basic entities—associations and enterprises and branch science. The self-financing of the basic entities does not negate nor contradict the necessity of strengthening the principles of centralization in deciding the funding and credit financing of the branch's strategies.

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Financial Impact of State Acceptance Seen at Enterprise Level

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[Article by M.L. Bashin, candidate of economic sciences]

[Text] As of 1 January 1987 state product acceptance was introduced at 1,500 of the country's enterprises. It was organically linked to conversion of enterprises to full cost accounting (khozraschet), self-financing, self-support, and increased accountability for production indicators.

Profit, profitable operation, is the source of the enterprise's financial prosperity. The basis of that kind of operation is the production and sale of a high-quality product that meets the requirements of Gosstandart. The transition to extradepartmental inspection has raised new financial problems. It is not possible to solve them through the efforts of financial-economic departments alone. The entire collective must master the effective methods of conducting economic activity. And that involves replacement of administrative methods of management by economic methods. Financial literacy, objective evaluation of economic situations, and sound decisionmaking are an integral part of those methods.

Experience has shown that not all enterprises have proven to be prepared for operation under the new conditions, even though those conditions were nothing unexpected for them. Wherever they were not given due attention, in the very first stage of state acceptance certain difficulties began to take shape. At the Volgograd Footwear Factory there was a sharp increase in the return of products for additional work. There was a noticeable drop in the volume of sales, profit dropped off 9 percent, and worker earnings decreased in a number of production sections. At the Lyubertsy Farm Machine

Plant worker earnings in the pivotal section of the first shop dropped off 30-40 rubles in the first months after state acceptance was introduced.

An analogous situation took shape at a number of other enterprises. But state acceptance was not at fault for all these costs. At many enterprises indulgences over many years shown toward indolent workers, the violation of state standards, and economic complacency had inevitably accustomed people to receiving their wages even for substandard products. In some cases they consciously lowered the quality, drawing up false technical documentation. Here is a specific example.

The products of the Moscow "Kalibr" Plant largely determines the high level of machinebuilding. In 1986 the plant received 22 claims filed against 534 products in the total amount of 92,000 rubles. Appreciable financial losses. In spite of the introduction of state acceptance, even in 1987 the products produced proved to be far from perfection. At present, products in the superior-quality category comprise 14 percent of the total, while the plan called for a proportion of 30 percent. Technical documentation has been neglected at the plant and was written back in...1972. Over those 14 years numerous corrections have been made in the documents determining product quality (the reference blueprints and standard costs). This was done without the appropriate signature of the persons responsible and without a specific date. Major financial outlays, which were reflected in a higher production cost, were, of course, required to correct the errors that had accumulated over the years.

At the Moscow "Frezer" Plant, where state acceptance has been in effect since 1986, they had to restructure the operation of plant subdivisions significantly. All the additional costs were reimbursed out of plant funds. The plant's financial department made a great effort. On the basis of factor analysis of the production cost the causes of its 3-6-percent rise were discovered. After all, for a lengthy period the plant had not been receiving claims and had been free of financial penalties. The new requirements compel them to carry out large-scale measures. An effective system for repair of equipment was created from scratch. Products requiring a higher accuracy of machining must be made on machine tools capable of guaranteeing that accuracy. Larger expenditures were made for preventive maintenance of equipment.

Here is another similar example. At the Volgograd GPZ-23 the first lot of bearings submitted to state acceptance were rejected. Plant personnel had forgotten that the OTK had literally selected products for it piece by piece. During the period that followed, state acceptance imposed more than 100 demands that were fair and proper. In the 1st quarter of 1987 alone extradepartmental inspection rejected 2 million bearings. Products had to be inspected three times, including expensive defectoscopy. Performance of this and other measures

had an adverse impact on the plant's financial indicators: there was an increase in work in process, and the rate of turnover of working capital slowed down.

The introduction of state acceptance has proved to be quite a difficult matter for many enterprises. It has forced them to restructure their work and to eliminate the burden that has built up of unfinished work. The situation is clear from the financial standpoint. The higher the quality of products and assemblies and the higher the quality of their assembly, the less additional work has to be done, which means more earnings and bonuses for workers.

This is confirmed by the experience of the Lyubertsy plant. Previously, the return of products from the OTK and correction of defects, which was shamelessly referred to as "resetting," was paid for at the plant at special unit prices. Now a fundamentally new system of bonus supplements for workers has been introduced: 50 percent for fulfillment of the program for the first 10-day period, 30 for the second, and 20 percent for the third. This has reduced crash efforts in assembly shops, and the financial losses that accompanied them have also decreased because the payment of overtime has been eliminated. This means that there are also financial levers aimed at eliminating losses.

But there have also been examples of a different attitude toward the demands of state acceptance. The "Manometr" Plant of USSR Minpribor manufactures automatic equipment that conserves thermal energy, equipment that is very necessary to the national economy. Before the introduction of state acceptance a favorable quality indicator was guaranteed by "methods" such as these. Financial penalties demanded by consumers for rejects they had discovered were paid on the spot. Teams of repair workers were sent to the consumers and corrected the defects on the spot. These trips considerably increased overhead and raised the production cost. The USSR People's Control Committee became interested in the plant's affairs in 1986. There was a strict order issued by Minpribor. But in January 1987 state acceptance held up a large volume of finished products. The finale proved to be what one would expect: the director was removed from his position, and the plant's production and financial-and-economic departments were strengthened. So, some managers look upon the demands of state acceptance in the right way, while others run to various authorities, begging for "temporary allowances" for technical backwardness. The demands of Gosstandart are rigid, but fair. And however difficult it might be for enterprises, restructuring is a necessity. Should you fail to do this, irreversible accountability will ensue. Criminal, administrative, or financial accountability has been envisaged by law for departures from standards, technical specifications, or product samples.

According to the results of a check conducted by the USSR Procurator's Office, Gosstandart authorities have imposed large penalties on enterprises of Minstankoprom. But the leadership of the branch has not drawn the

proper conclusions, since organizational and financial measures to exert pressure toward improvement of product quality have not been carried out everywhere. Only 2.4 percent of the financial loss has been reimbursed at the expense of the persons responsible.

At a number of enterprises technical progress and improvement of product quality are taking place mainly on the basis of a partial modernization of production. This takes several years, but during that time the world technical level of products is not standing still, it is creating a new market in advance.

It is important to always remember that improvement of quality is related to activation of the human factor. Calculations have shown that every mistake by designers of new equipment during preparation of technical documentation has its economic price. A small mistake in the early stages of design costs 50-60 rubles. If it is detected during pilot production, then its price is 200-300 rubles. The losses during series production run to tens of thousands of rubles, and a mistake discovered after the finished product is manufactured inflicts financial losses which often run into the millions of rubles.

State acceptance has raised problems whose solution requires improvement of the operation of financial-and-economic departments of the enterprise. For example, at a number enterprises it has been found that consumption of materials has been artificially reduced at the expense of quality. This helped to "lower" the cost of the product and to create unrealistic profit. Financial departments can take effective steps to eliminate such cases.

Use of factor analysis of the component elements of the production cost has great importance in this context. At every enterprise it is important to set up cost-accounting monitoring of the costs under all items, so as not to allow departures from the established standard rates of consumption and product standards. Often rejects get into the production process with the supplies and components delivered by indolent subcontractors. It is indispensable to set up a well-organized inspection of incoming supplies and components. Financial-and-economic departments have a large role in this matter; they must prepare up-to-date information on financial losses by all sources. The experience of a group of enterprises of Minelektrotekhprom has confirmed the expediency of this measure.

We should mention that the "Law on the State Enterprise (Association)" contains an important provision: members of the work collective are to be accountable for efficient use of the socialist property entrusted to them. That also applies to financial resources. Only when this approach is taken will there be a guarantee on legal foundations that wages will be paid for quality work, for efficient utilization of labor and physical resources for development of production, and for the collective's social development.

In our opinion, there is a need to overcome the widespread financial stereotype that improvement of product quality does not necessarily result in higher production cost. In reality, measures necessary under the conditions of state acceptance do require additional costs, which are often quite large. At the same time, it is indispensable to put an end once and for all to the practice of artificial "simplification" of technology, affording a fictitious economy on the resources used.

The "Mosbytkhim" Association manufactures the anti-static preparation "Lana-1." State acceptance discovered that the paste did not include whitener and other materials envisaged by the technology. Production had been set up to "conserve" expensive materials. The enterprise has been punished for its deception. The reports on fulfillment of the plan were reduced by 250,000 rubles, and 7,700 rubles were confiscated as a revenue of the state budget. The Quality Emblem was removed from the product.

The smooth and uniform operation of production has great importance to guaranteeing high product quality. Guaranteeing this is not the concern of production and technical departments alone. Crash efforts in the 2d half of the month are in most cases related to violation of contract obligations by suppliers. Under these conditions, there is a sharp drop in product quality, and the enterprise's financial condition becomes problematical. Financial-and-economic departments cannot be merely passive recorders of economic losses; they must indicate the sources and total amount of the losses. All of this presupposes the strictest economy, the ability to foresee and provide effective aid to the collective to eliminate the economic losses discovered. This kind of experience has been gained by the financial departments of VAZ and the Sumy NPO imeni M.V. Frunze.

State acceptance has demonstrated that the proceeds from sales may drop off, the volume of work in process may grow, and the rate of turnover of working capital may slow down. In a number of cases relations become problematical with Gosbank in obtaining funds to pay wages. State acceptance has proven to be quite a difficult test for the maturity of many financial departments. A number of Moscow enterprises that have made the conversion to the new operating conditions and state acceptance have ended up in a difficult financial situation. The Moscow GPZ-1 and "Frezer" Plants were disallowed all types of credit financing since they went into debt in a substantial amount to their suppliers and Gosbank.

But all enterprises have untapped potential for improving their financial operations. For example, when there is a substantial improvement of product quality, manufacturers of the products have two new financial sources or incentives. The first is that they receive supplemental resources from the reduction of production cost, and the second is the additional profit for manufacturing a product of improved quality because of the supplement

applied to its price. But if quality is to rise constantly, technical innovations have to be applied to production constantly. That is an axiom.

The retooling of enterprises, which guarantees improvement of product quality, enhances the role of financial reserves at the level of the enterprise and the branch. They must figure as a stabilizing factor for restoring the enterprise's financial condition to health. In the past, reserve funds of ministries have frequently been used to subsidize enterprises operating poorly at the expense of those performing well. As a rule, this was previously established either through direct confiscation of profit or in the form of assigning planning targets based "on the level already attained" and in the form of an incentive for "percentage of growth." As a consequence, both groups have less desire to perform well. As enterprises make the transition to self-financing, full cost accounting, and state acceptance, practice of this kind is precluded.

The practice of collecting various payments into the budget, just like formation of incentive funds, should be reoriented toward making the entire system of economic incentives directly dependent on the final results of production and on a high level of product quality. The first lessons from the introduction of state acceptance have been confirming this conclusion.

The new conditions require establishment of differentiated rates of transfers from profit of those enterprises which are making a major effort to retool production. It would seem advisable to establish the rates of their deductions into the reserves of their branch at a lower level. Likewise, it would be advisable to set the standard deduction to the reserve of the enterprise not in an absolute amount, but in percentages of profit, which would make it possible to guarantee a flow of funds into the reserve fund from the entire amount of additional profit. When an enterprise receives financial support from the reserve funds of the branch, the procedure should call for the guaranteed obligation of their repayment strictly on the stipulated basis. For example, on the provision of production of a high-quality product and on provision that it is put into production within a specific period of time. This requires that financial departments compile substantiated advance estimates of the use of the funds they receive and sources for their repayment.

An analysis of the effectiveness of short-term credits from Gosbank has shown that this important lever has not yet been closely related to optimum utilization of the resources borrowed. Expansion of the turnover of credit has not always been backed up with the corresponding physical support. This results in a growth of bank loans that is greater than the real benefit from their use. The effectiveness of the return from the credit ruble that is in economic circulation has dropped off, and one particular reason for this has been the lack of sound standard amounts of "own" working capital and realistic conditions for replenishment of that capital from the credits of

Gosbank. Consequently, credit financing by Gosbank could turn into a disguised state financial subsidy of enterprises in an unstable financial situation. The sources of this negative phenomenon are also related to the low quality of the product produced, i.e., to the formation of losses through the fault of the enterprise itself. Credit should once again be given its original function—participation in the formation of those expenditures which are temporary in nature. They may occur even at enterprises performing well.

The preliminary results of state acceptance suggest the need to take a number of steps in the domain of pricing as well. Of course, prices should not be raised so that the products produced are brought into full conformity with the requirements of state standards. We are referring to something else. In the course of restructuring the system of improvement of product quality many enterprises will go to the frontiers that guarantee a fundamentally new product level, new durability, and other high-quality indicators. In such cases it is advisable to revise the prices set earlier in the sense of a justified increase. This will make it possible to bring the price level into conformity with the additional production costs, which make it possible to increase the product's performance characteristics and to satisfy the growing demand for it. Prices must play a more vigorous role in stimulating the large-scale improvement of product quality. COPYRIGHT: "Finansy SSSR", 1987

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Decreased Ruble Buying Power, Monetary Policy Discussed

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pp 6-7

[Article by Valeriy Vyzhutovich: "Power of the Ruble"]

[Text] The following fact has been published: Unclaimed goods worth more than 2.5 billion rubles have accumulated at warehouses belonging to enterprises of the Ministry of Light Industry. At the same time, the sector owes trade ordered cotton fabrics worth 250 million rubles, silk worth 68 million rubles, and leather footwear worth 41 million rubles. And what about the profit? There is complete "order" concerning the profit—it is credited to products that have not been sold and will hardly ever find a customer. Meanwhile, even Marx wrote: "A thing cannot be a value without being a consumer good. If it is useless, the labor expended on it is also useless, is not considered labor, and, therefore, does not form any value."

Incidentally, for the goods, on account of which warehouse and store shelves now crack and break, their creators have received not only "their rightful money," but, one should think, bonuses as well. The counters of department stores, where they appear with their money and, making no headway, go away empty-handed, now vindictively remind them of the fact that wages should

be earned. There is money, but there is nothing to buy. This will be as long as our income grows more rapidly than the output of goods, which we are ready to and can consume. For now the growth of wages outstrips the growth of labor productivity. An especially large amount of unearned money was issued at the end of the 1970's and the beginning of the 1980's. In the country in 7 years—from 1975 until 1982—the output of consumer goods increased by 29 percent and of agricultural products, by 13 percent, while the paid out wage fund rose 37 percent.

To what does all this lead? To a decrease in the purchasing power of the ruble, which is expressed in the amount of goods and services that can be purchased for a monetary unit. After all, bank notes represent the obligation of the state to offer goods to the population, an obligation by no means always fulfilled now. The ruble is the weakest and the most lightweight in the sphere of popular consumption of goods and services. The postponed demand accumulates in savings books, now totaling more than 200 billion rubles.

The pithy formula "you for me and I for you" born during our bright days, not in the damned past, of course, is amoral. However, economics is always hidden in morality. Under the conditions of the ruble not reinforced with goods it has blessed the physical exchange of every kind of shortage. Bribe is now taken and given primarily with "Borzoi puppies"—"cervelat" sausage, "tulpan" toilets, "Klima" perfume, passes to Koktebel, and tickets to Taganka...

In Ulyanovsk, to where the newspaper business brought me not long ago, a group of counterfeiters were caught in the act almost before my very eyes. Curiosity is an irresistible force: "And in what denominations did they trade? Twenty five? Fifty? One hundred? It turned out that it was much worse. They forged coupons (I will not say how. I swore that the method would remain secret) for meat and butter. The city seethed...

When the ruble does not secure the obligations issued by the state treasury, life itself coins and puts a different, solely hard, currency into circulation. On another mission to the village of Losikha on the Altay Put k Kommunizmu Kolkhoz I observed the maneuvers of the same economic origin—with a correction for a rural locality—around industrial goods. After cost accounting had become firmly established there, the savings bank-books of kolkhoz members became heavier. The head of the kolkhoz savings bank mentioned the total sum of savings: 1.166 million rubles. There is nothing to spend on! The scarcity of the stocks of the rayon consumer society and the persistent shortage of the desired commodity impose strict conditions. Only when observing them can one buy what one wishes. In order to receive a coupon for a pure wool carpet (Losikha does not recognize a napless woven wool carpet), a family must deliver 2,000 liters of milk from its own cow. The strictest record as to who delivers how much is kept. Everyone

persistently sees to it that his neighbor does not over-report. Leonid Shevelev, leader of a link of herdsmen, honestly fulfilled his quit-rent norm and went to the rayon center to barter. At the counter a shortage was revealed suddenly. Shevelev was told that he failed to deliver 500 liters. Leonid ripped his shirt: "What do you mean I failed to deliver? Why? This is noted in my record!" The saleswoman yawned and turned away. To this day Shevelev is convinced that someone impudently chopped off 500 liters from him, putting them down to his account with the not disinterested assistance of figures in the rayon consumer society. "Renegades!" Shevelev branded the conspirators. "Everything is done through personal connections!"

Nikolay Frants, another link leader, "saved up" for a "Druzhba" saw—a kolkhoz member owes 1.5 quintals of meat for it. Nikolay delivered a heifer and a young bull, but someone grabbed the saw from him at the last moment. Frants set his sights on a "Zhiguli." He picked a subtle, one can say political, moment—the arrival of the raykom secretary at Losikha. The day before he incited the brigade leader: "Ask what complaints and suggestions there are, open up, start with the car." The guest arrived and a meeting was convened. "One thing and another," Frants recalled, "and it was time to finish, but my friend was speechless. I winked at him, but he did not say a word. I winked, but he... Nevertheless, he put in a word for me. The secretary wrote down in his notebook: All right, I will take this into account..." After 1 month Frants acquired a "Zhiguli."

Yes, it is easier for a kolkhoz member to save up than to spend. He knows better than anyone else that there is no happiness in money. With its example Losikha only confirms the general tendency. The more time passes, the more it is evident that it becomes ever more difficult to encourage or punish with the ruble. Under the conditions of the shortage of high-quality goods and all kinds of services the rural worker (the urban worker as well) values not so much the ruble as the opportunity of spending it. However, when he is given such an opportunity on the basis of a coupon, acquaintance, or favor of the authorities, the earned ruble loses its force, ceases to be a measure of public recognition and a universal equivalent, and simply decreases in value. The ruble is not equal to the ruble—this is a situation, at which we have arrived not yesterday and from which it is not so simple to get out.

Aleksandr Ivanovich Balkashin, chief of the Chelyabinsk Railroad Station, told me how at one time he was invited to the rayon executive committee as a chairman. "Think about this," the first secretary of the rayon party committee tried to persuade him. "You will not be sorry. True, the wages are almost the same, but... the ruble of the executive committee is heavier than that of the railroad station. "In what way?" Balkashin asked. "Don't you know?" the executive official smiled.

We know, how are we not to know! The chief or a worker of a large enterprise, where the system of "orders" operates, having a free access to sausage, meat, and butter, can barter his ruble in a completely different way than, for example, a teacher or a physician, who can buy the same products only at the market and, of course, pay for them three times more. Receiving approximately the same wages, people often live differently. This social injustice is largely due to the low purchasing power of the ruble. When acquaintances and friends meet, one hears the following more and more seldom: "Well, how much do you earn?" The following question is much more important: "Where did you get your job and what is the situation with supply there?" Not to work better and, consequently, to earn more, but to get a job where "everything is given" is now an urgent task for many. Everyone knows well what distortions in consciousness such a practice engenders.

What is the economic nature of the ruble? What should be done so that it may become a hard and stable currency?

I hold in my hand a book by Prof L. Yurovskiy entitled "Denezhnaya politika Sovetskoy vlasti (1917-1927)" [Monetary Policy of the Soviet Government (1917-1927)] published in 1928 and I ask myself: Was it really necessary to go thus far in order not even so much to understand as to painfully feel with the entire "skin" of social existence the rightness of the scientist, who even at that time, almost six decades ago, stated in a scientifically sound and calm manner as something obvious: The ruble should work.

I am not writing a review: The most penetrating and guileless critic—time—gave the grades a long time ago. Nor am I resurrecting forgotten pages, because there is no need for this. The book lived and lives and in the struggle of economic ideas its place was and is on the side of the barricades where dauntless and honest minds resistant to idealistic temptations and prejudice have taken up position. I will not mention the names of economic scientists subjected to this prejudice. To be sure, many of them have already "restructured themselves." After all, the rehabilitation of the ruble and of its considerable role in the socialist economy was proclaimed from the highest tribunes. Today many serious economists again turn to L. Yurovskiy's book. Its author was a highly educated scientist and a brilliant and fine expert in his subject. Like many of his associates and colleagues he lived until the time when the flower of Soviet science moved to Solovki and Kolyma. L. Yurovskiy himself departed for this destination. He departed forever...

It seems that the protracted, long-term fight against everything that Lenin called "socialism of feeling" by semiaughty, semiboorish, patriarchal frames of mind is nearing its end. However, at the site of fire of these disputes, whose flame has been extinguished, it is still possible to detect the smoldering coals of the patriarchal

outlook: Minds cool down more slowly than kulaks after a fight; minds inflamed by prejudice, even longer than that. For such minds Yurovskiy's book is a cold sobering shower: Perhaps they will become cooler.

The 10-year biography of the Soviet ruble was the subject of the professor's scientific chronicle. The ruble acted as a silent extra during the period of "military communism" and achieved the main roles during the New Economic Policy... The history of these transformations has set a clear boundary, which extends to this day, in the concept of what money and its true "role" are.

In addition to other threatening omens, bank notes loudly pointed to the crisis situation of 1917. A total of 390 million rubles were issued both in January and in February, while the average monthly emission during the entire preceding year was 300 million. By October the monetary mass almost doubled and prices rose 224 percent. The purchasing power of the ruble did not reach 10 prewar kopecks. The failure of the monetary system and the introduction of state bread monopoly—from here there is a step to the destruction of the commodity-money economy with purchase-sale relationships inherent in it. This step followed naturally. Production spontaneity, in part, was suppressed by the planned distribution of what was already available, or was being prepared for output. Professor Yurovskiy witnessed how "elements of the planned economy of the 'distributive' type..., which could not fail to be established in the beleaguered fortress, where hunger and cold set in, were created gradually." Today we can reward such a type of economy born in such an atmosphere with a full measure of understanding and respect, but in no way with enthusiasm. "Military communism" with its system of distribution according to lists and forced allocations, when the People's Commissariat of Food was the most powerful of all the civil departments, when the "state gave every citizen not as much as he wanted and could buy, but as much as the state in the person of its distributive bodies considered it advisable to give him"—this era depreciated the ruble, bringing it down to a substitute in the form of "accounting units." "There was always a shortage of these units," Yurovskiy wrote. "The center sent them out to localities in railroad cars and there, upon the arrival of the 'freight,' the executive committee distributed it among its departments and every department distributed its share among the institutions subordinate to it. Usually, the distribution was made once or twice a month and in guberniya cities those were big days of an intense fight among departments and institutions... Money was given out regardless of whether 'credits' were opened for an institution, but opened 'credits' in no way ensured the receipt of money."

It goes without saying that the forced and necessary policy of centralization of economic relations by no means contributed to an improvement in monetary circulation. On the other hand, it gave scope to starry-eyed dreams. Dreams? Nothing of the kind! Having proclaimed the physical exchange and its centralized

management organically inherent in socialism and, conversely, commercial accounting and free trade profoundly alien to it, on 19 December "leftists" prepared a plan for the abolition of money. Only through Lenin's personal intervention was the plan not placed on the agenda of the congress of soviets. A little later Vladimir Ilich ironically noted: "I believe that the Russian ruble can be considered famous, if only because the number of these rubles now exceeds a quadrillion." By that time (November 1921) Lenin's article "On the Importance of Gold Now and After the Full Victory of Socialism" had already been published. This work represented a turning point in the development of economic thought, because the development of trade was put forward in it as one of the immediate tasks.

To trade, without having a hard currency, is just as impossible as to stabilize the ruble, not trading. "Commodity-money-commodity"—in this economic coupling all the links are nondetachable. Only the New Economic Policy with its commercial accounting and free market was able to provide stability for them at that time—only the New Economic Policy, whose opponents, their patriarchal sentiments being offended, did not sense in it anything more than "carbon monoxide poisoning" and quite sincerely cried out about the failure of communist ideals.

What ideas will not occur to a person whose head is clouded with "carbon monoxide poisoning"!

Could Yurovskiy assume that the initial collision of competent views and ideas with conceit and prejudice would become programmed and would separate the convinced advocates of commodity-money relationships and followers of the patriarchal outlook into different corners, as in a ring, for a long time? Hardly. The professor did not exceed with his pen the limits of the surveyed period and it would appear that he did not have inclinations for long-term forecasts. However, such, apparently, is the characteristic (fortunate or unfortunate—I don't know) of many scientific and, at the same time, publicistic works: Reflecting the topic of their day, years later they also hit with precise aim the very "eyeball" of our day. Not so much the penetrating sagacity of their creators as someone's thickheaded lack of receptivity to the lessons taught is perhaps to blame for this.

"Opponents of the market," stubbornly not understanding that under conditions of public property, planned economy, and cost accounting it is precisely the market that can and should ensure a sound unity of the interests of the producer and the consumer, have scared [the public] with market spontaneity and continue to do so. It is precisely the market that sets the true price of a commodity. Therefore, Yurovskiy demonstrated, the task of monetary policy is to see to it that the unit in which prices are expressed is hard and constant. The price is the highest criterion in economic affairs. It is the monetary sum, during the setting of which the demand

for a commodity and the supply of a commodity are in a state of balance. In essence, the entire life of the market is directed toward the search for this balance. However, if everything has a price and is sold and bought for money, the monetary account, not commands and orders, should regulate the economic activity.

Alas, any of our housewives can draw a handful of graphic examples from her own experience in the exhausting chase after scarce goods. Having even secondary education and a bent for economic reading matter, she would find in Yurovskiy's book a skilled and accurate explanation of the perpetual shortage of some things: "At a 'free' commodity market a more rapid growth of demand than of supply, usually, finds its full expression in a price rise. At a market, where all prices would be subjected to a strict regulation, that is, the 'ukase' prices set by the authorities would be the actual prices, an increase in demand would not cause a rise in prices, but would be fully expressed in the shortage of goods. Customers would buy up all available goods at the fixed price and part of the demand would remain unmet."

The New Economic Policy weakened the reins of centralization and enabled the market to steer the economy, but not to where something might turn up, but toward the mutual interests of the producer and the consumer. Products again became goods regardless of who produced them. Prices were put into effect. The commodity economy turned into a money economy. Enterprises were granted the right to purchase at the market all goods of handicraft and small-scale production and were soon admitted to the market as salesmen. Purchase and sale with payment in money displaced the system of distribution according to authorizations and orders. The further development of trade required a hard currency and the decree of the Soviet of People's Commissars instructed the People's Commissariat of Finance to begin minting gold coins. The monetary reform of 1924 abolished the "sovznak," transferring the reins of government to the chervonets.

During several subsequent years the country, which had been brought to the brink of impoverishment by the ruin, made a stunning ascent to normal life.

In contrast to marriages, which, as is well known, are made in heaven, a business-like partnership is a "marriage" contracted in other, also higher, spheres—such as the State Planning Committee, the State Committee for Material and Technical Supply, and other central departments. Simply speaking, the alliance between the supplier and the consumer sanctified by an order and an instruction is born against their mutual will: You will like it when you get used to it. The "sympathy" of one enterprise for another, which should be based on advantage and mutual guarantees, is not encouraged. To this day plants and sovkhozes do not buy everything that is necessary for the development of production, but receive it according to a schedule of allocations, whose main

principle is "take what is given." Money and prices serve only accounting here. Such categories of commodity production as trade, credit, demand, and supply do not operate.

"We have distribution plans, which do not take into consideration the price level existing at the market and which set for themselves the goal of distribution irrespective of the existing monetary demand, that is, in essence, distribution outside the market and with the elimination of all its rules."

This observation by Yurovskiy dates from 1928, but even today hundreds and hundreds of economic managers can sign their names under the words "we." For example, B. Fomin, general director of the famous Leningrad Elektrosila: "We... have money for production development. More than 7 million rubles earned by the collective were deducted into this fund. It would seem that one should take and put them into operation—renovate shops and sections and buy modern equipment. But nothing of the kind! We do not have the right to use them independently. "Only in a centralized manner, only through the ministry!" N. Chikirev, general director of the famous Moscow Stankostroitelnyy Zavod imeni Sergo Ordzhonikidze Association, also spoke about the same thing at the same place—a meeting of PRAVDA's "business club": "The transition to new methods of management and the strengthening of cost accounting largely depend on the extent to which an enterprise is the owner of the derived profit. Now, when every ruble of profit is strictly tied up by the financial plan and assigned in advance according to paragraphs, the enterprise, in point of fact, does not even have a part of the earned profit at its disposal and can use it only according to orders strictly prescribed from above."

If even such industrial "gullivers" are entangled and tied hand and foot by orders, what is there to talk about "lilliputs"!

The idea of wholesale trade in means of production is opposed to the idea of distribution of resources "according to cards." Realizing it, we will be able to remove from the dictionary of our economy such words as "shortage" and "nondisposable items." Direct and long economic relations have already been discussed for three five-year plans. The result? This year the State Committee for Material and Technical Supply has transferred all the consumers of the nonproduction sphere and enterprises of the Ministry of Construction, Road, and Municipal Machine Building to wholesale trade. The "experiment"—this is how the sensible order of things is now called! All right, whatever it is called, only let this order be established and everywhere, not only for the chosen. It should be as follows: You ordered, you buy. In contrast to the recipient, the customer counts money and will not take what is unnecessary—it doesn't pay. The middleman named ruble, not Ivan Ivanovich from the supply office, will service this legitimate deal.

Reading Yurovskiy's book with the eyes of a contemporary man, who has watched the economic subject begun by him until the middle of the 1980's, who has breathed in the March and September ozone of 1965, who has gotten to know the taste of hopes and disappointments, and who has now again taken heart, reading with such eyes, one keeps himself away by force from the simple-minded question: When, finally? When will economic methods prevail and enter practice profoundly and irrevocably? When will the ruble, not gross and a multitude of other indicators essentially showing nothing, become the only accurate "thermometer," by which we will judge the state of health of our economy? The profit is the only real standard. Either it exists, or not, with all the ensuing consequences.

To put stress on the production volume, to pay for products rejected by the consumer, and to clog warehouses with this junk means to increase accumulations of money, whereas, by nature money should circulate and be in use, not lie.

Neither the accounting unit, nor the "sovznak," being made of paper not only in appearance, but also in essence, secured obligations, which Yurovskiy did not fail to note: "The revolution made them into paper money in the strictest sense of the word, that is, paper bank notes, to which the state regime gave the power to pay off the promissory notes appearing in the economic turnover, but which were not the obligations of the state itself. The very endorsement on them, announcing that they are 'secured by the republic's entire property,' was devoid of content, because in the absence of an obligation it was not known what, in fact, was secured. This endorsement only indicated once again that verbal formulas were very hardy and that they continued to be used when their content vanished a very long time ago."

Even today, however, the ghost of the deceased "sovznak" appears, like the ghost of Hamlet's father, where the ruble does not have power. And what about the timid indignation of the bashful "disinterested persons," professing squeamishness, which seems natural for the Soviet man, about the "filthy lucre," about money that "corrupts"? I am ashamed to say that I am rather afraid of the aggressive chastity of these moralists, who are unable or do not wish to understand that not "long" and not "short" rubles, but only those that are longer or shorter than those earned, corrupt us. Money that does not have a commodity coverage corrupts. Hence the notorious "penchant for acquisition," which horrifies some of my fellow-citizens, this social disease, from which the population of France, or, for example, of Italy does not suffer, although in these countries there are slightly larger quantities of varied and good commodities, but slightly fewer edifying talks about them.

Nothing promotes healthier morals and manners than a healthy economy.

INDUSTRIAL DEVELOPMENT, PERFORMANCE

Figures Cited on Development of Interbranch Infrastructure

18200059a Moscow *IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA* in Russian
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[Article by N. I. Pereleshina: "The Economic Effectiveness of Forming the Infrastructure of the Complex"; first paragraph *IZVESTIYA AKADEMII NAUK SSSR* introduction]

[Text] The article substantiates the need to separate a unified interbranch infrastructural complex within the system of the national economy. It is suggested that the net output and also the applied resources of live and embodied labor, which taken together comprise the economic potential, be used as economic gauges of the results of the activity of the complex as a whole and the production and social infrastructures. Quantitative dependencies are established between the production of material goods and the results of infrastructural activity in the complex as a whole and also its two constituent parts. Indicators are given for the national economic effectiveness of the utilization of the economic potential in the national economy, in the production of material goods, and in the infrastructural complex for 1970-1985.

The reconstruction of the national economy envisions radical changes in the structural and investment policy. As was emphasized at the 27th CPSU Congress, the essence of the changes consists in shifting the center of attention from quantitative indicators to quality and effectiveness, from intermediate results to final ones, from expansion of production capital to its renewal, and from increasing fuel and energy resources to improving their utilization and accelerated development of science-intensive branches in the production and social infrastructure [4, p 25]. These principal structural changes envisioned particularly in the state plan for the country's economic and social development during the 12th Five-Year Plan [Fig. 3] determine the policy for interaction among the leading levers and motive stimuli in the economic mechanism and are realized in the radical reform of the system of national economic management.

The changes in planning and economics and the organizational-management decisions adopted in the country since the April (1985) Plenum of the CPSU Central Committee and the 27th Party Congress comprise a promptly developed complex of interconnected measures that reflect the most important objective tendencies in the national economic integration of public labor.

Unionwide integration of public labor consists in combining homogeneous and interconnected kinds of activity for the most rapid achievement of the high final national economic results. It is especially important now for it to have adequate organizational forms. Thus in 1985 the country created the state agroindustrial committee (Gosagroprom) of the USSR as the central agency for national economic management of the agroindustrial complex which provides for planning, financing and management of it as a unified whole at all levels, a most important condition for effective activity of this complex [5]. In 1986 it was recognized as necessary to transform the USSR State Committee for Construction Affairs into the Union-Republic State Construction Committee (Gosstroy) of the USSR—a permanent agency of the USSR Council of Ministers for guidance of the country's construction complex [6]. In the agroindustrial and construction complexes we have created a system of management agencies that is unified from above to below, and these agencies do not duplicate each other either in terms of structure or in terms of function. In the system for management of the national economic complexes and groups of interconnected branches, in addition to Agroprom and Gosstroy, there are permanent agencies of the Bureau of the USSR Council of Ministers: for social development, machine building, the fuel and energy complex [2, 5], and the State Foreign Economic Commission [7, p 61].

A scientific analysis of the unionwide integration processes makes it possible to formulate a conclusion formulating the need for profound and comprehensive theoretical research on the socioeconomic aspect of the formation, distribution, development and organizational structuring of the national economic interbranch infrastructural complex. "Theory is necessary not only for long-range social and political orientation," emphasized M. S. Gorbachev at the All-Union Conference of Heads of Departments of Social Sciences. "It is necessary for literally every step we take forward. Not a single practical problem of any significance at all can be solved without being interpreted and substantiated theoretically. Theoretical activity itself becomes one of the most important motive forces for socialist and communist construction and a most important instrument for restructuring" [2, p 3].

According to the definition we propose, the infrastructural complex is a reproduction subsystem of the national economy, the final result of whose activity is reflected in prompt and high-quality satisfaction of the needs of production, the nonproduction sphere and the population for socially necessary services. The infrastructure occupies an important place in the system of the unified national economic complex (Table 1) (calculated from [21]).

Table 1—Composition of Infrastructural Complex, units

Structural Unit	Branch	Subbranch	Kind	Group	Subgroup
National economy	18	96	217	281	42
Including:					
Infrastructural complexes	10	46	62	20	6
Of this:					
Production infrastructure	5*	28	23	—	1
Social infrastructure	5**	18	39	20	5

*Transportation, communications, material and technical supply and sales, procurements, trade and public catering. **Housing and municipal services and consumer services; public health, physical culture and social security, public education, culture, and art; credit and state insurance.

But the number of structural units in and of itself still does not provide sufficient justification for scientific argumentation in favor of singling out the infrastructural complex as a unified whole. It is necessary to have initial theoretical premises. First of all, we shall discuss that which reflects the nature, conditions and results of labor in the infrastructural complex which we propose to have separated out. Let us turn to classical points. Thus Engels pointed out that under certain conditions certain kinds of activity inherently have their own development, special laws and phases that are conditioned by their own nature. "The society generates certain general functions without which it cannot get along. People intended for this form a new branch of the division of labor within the society" [1, Vol 37, p 416]. In this case we are speaking about an extremely broad range of kinds of expedient labor activity whose results are materialized in useful effect in the form of services that satisfy the needs of production, the nonproduction sphere, and the population. We know of Marx's description of services as a special consumer value "which adds this labor like to any other commodity; but the special consumer value of this labor has been given a specific name here, 'services,' because labor renders services not as things but as activity...." [1, Vol 26, part I, p 413].

We shall give two more of Marx's statements that are necessary for the subsequent presentation. One is about the fact that a service must be a special object of commodity and monetary relations regardless of its form—whether it be a material good or a service. Marx pointed out the essential political and economic peculiarity of the product of labor which consists in that "the consumer value or good has value only because abstractly human labor is embodied or materialized in it" [1, Vol 23, p 47]. Another, better known statement pertains to the problem of making kinds of labor linked to the production of material goods and socially necessary activity for rendering services equal in the socioeconomic sense. It is justified to say that the confusion of the classical tenet presented below conditioned, to a significant degree, the fact that the irrational "residual principle" of allotting funds for the development of the infrastructure prevailed for a long time in the past. Marx pointed out that "any given point among the objects of

consumption, along with objects of consumption that exist in the form of goods, there is a certain quantity of objects of consumption in the form of services. Thus the overall sum of objects of consumption is always greater than what it would be if there were no services suitable for consumption" [1, Vol 26, part I, p 151].

A second theoretical prerequisite for substantiating the need for singling out an integrated infrastructural complex is the revision of the interpretation of such a political and economic category as "service." In this connection it is expedient to cite two relative interpretations of material goods and services formulated by the Permanent CEMA Commission on Statistics. "It is suggested that material goods mean the reproduced result of labor for transforming substances and forces of nature into a form suitable for satisfying private and public needs. They encompass the production of material products in the forms of things and energy and so-called material services (transportation, commodity turnover, storage, and so forth). And services are the result of activity which satisfies personal and public needs but is not embodied in a material product. The peculiarity of services is that the time for granting them and consuming them, as a rule, coincide, and they exist only in the process of their creation and, as a rule, cannot be separated from the one who performs them" [10, p 99].

Thus service as a political economic category has as its distinguishing mark in comparison to the production of material goods and creation of spiritual values in the system of social relations of reproduction both essential (nonsubstantial) and temporal (the coincidence of the process of the rendering and consumption and the impossibility of creating supplies) peculiarities that are conditioned by the nature and conditions of labor and the specific form of the material results of socially necessary activity. Labor functioning in the infrastructural complex could be characterized by the following words of Marx: "It brings advantage not by the fact that it transforms the nonproductive form into a productive one, or nonproductive labor into productive labor. It would be a miracle if such a transformation could be accomplished as a result of this kind of transfer of functions from one person to another. On the contrary, it

produces advantage by the fact that because of its activity a less significant part of the society's work force and work time are spent on this nonproductive function" [1, Vol 24, p 150].

The existing division of services into material and pure (nonmaterial) requires rethinking. From the standpoint of more effective achievement of high final national economic results, in these it is necessary to take into account equally, along with means of labor and objects of public consumption, all kinds of socially necessary services, regardless of their main consumption.

It is necessary to give special discussion to the aspect of the main consumption of services and, consequently, the problem of the classification of the infrastructure into production and social. This is explained by the fact that the processes of accelerated integration of public labor in the production of material goods is equally inherent in those kinds of activity which are linked to the rendering of services for which it is practically impossible and frequently also inexpedient to establish clear-cut boundaries of their main consumption. The dispute about cargo and passenger transportation is well-known. When defining the tasks of the transportation complex for the 12th Five-Year Plan, N. I. Ryzhkov emphasized: "I should especially like to discuss the problem of improving passenger transportation on the railroads. While in the branch as a whole there have been certain positive changes, the situation here is still unsatisfactory.... Transportation workers must simply display elementary concern for human beings. This problem does not exist only in rail transportation. It is just as crucial in air, automotive, and other kinds of transportation" [3, p 24].

A second example of fundamental significance illustrates a tendency toward a decisive expansion of the range of consumers of services and ensues from the new functions of material and technical supply. "Wholesale trade in products for production and technical purposes is a form of material and technical supply whereby the consumers are provided with material resources without funds or quotas for orders from consumers on the basis of agreements with territorial agencies of the USSR Gosnab" [11, p 29]. Associations, enterprises, and organizations of individual ministries and departments have already changed over to this form. Their number will increase in a planned way and will include not only production associations but also organizations and institutions of the nonproduction sphere. The effect of the aforementioned tendency consists in the practical realization in the future of Engels' idea to the effect that in an intelligently organized society there is the possibility of "determining ahead of time what quantity of each individual commodity will be needed to satisfy national needs; all of this quantity will be ordered wholesale directly on the spot and it will be obtained directly without intermediaries, without any halts or loading or unloading, except for those which are actually dictated by the nature of the railroad, and consequently there will be a great savings on labor force...." [1, Vol 2, p 537].

There is also another new function of material and technical supply in which both purely production services and services for the population are very closely interwoven. For example, in 1985 we sent through channels of material and technical supply for sales to the population 33.6 million tons of coal, more than 4 million tons of cement, 45 million square meters of construction glass, and 3.9 million square meters of timber materials [12, p 472]. Although in comparison to unionwide production the volumes of the aforementioned kinds of products are relatively small, they still make it possible to reveal more clearly the socioeconomic functions of what is still the most important constituent part of the production infrastructure. In keeping with the Comprehensive Program for the Development of the Production of Consumer Goods and the sphere of services to the population, in the future this connection between services of a production and an individual nature will become stronger; under the 12th Five-Year Plan we shall fully satisfy the demand of the population for construction materials, sanitary and technical equipment, garden cottages, and garden and orchard tools and supplies. There will be a larger assortment of machines for mechanizing labor on private subsidiary farms and garden plots: means of minor mechanization in crop growing, universal machines with sets of various fixtures for processing agricultural products, power mowers, small tractors with a set of equipment for cultivating the soil, installations for preparing feeds, and other machines [9, pp 17, 18].

Attaching a great deal of significance to production-infrastructure integration, one should emphasize that in keeping with the already mentioned Program for the Development of Consumer Goods and the Sphere of Services, one should enlist in the service of the population enterprises and organizations of all ministries and departments, regardless of their specialization or the nature of their basic activity [9, p 21]. The interpenetration of production and the social infrastructure is especially clear in the reforms that have been carried out in the country's general educational and vocational schools and the system of higher education. Thus for purposes of improving the labor education and occupational orientation of students in general educational schools, it has been recognized as necessary to have compulsory participation of schoolchildren in socially useful productive labor, mainly in training shops and sections of enterprises and organizations. The schools are assigned base enterprises which, along with the general educational school, are given responsibility for organization of the labor training of the students [8, pp 78, 79].

Along with the objectively predictable "interweaving" of production and the infrastructure there arise new specific forms of national economic activity which in terms of the functional criterion for classifying labor can be included only in the infrastructure. We have in mind, for example, state acceptance of products in associations and enterprises which was introduced at the beginning of 1987 in 1,500 enterprises of 28 ministries [13, p 8]. The

tasks of state acceptance include quality control and acceptance of products at any stage of manufacture, checking to make sure that they meet the requirements of standards and technical specifications of the approved model (standard), planning-design and technological documentation, delivery conditions and agreements: selective inspection, disassembly and testing, if necessary, of individual components, sets of parts and items and, finally, final acceptance of the prepared and fully batched product in keeping with the established requirements [13, p 7].

When earmarking the problem of the composition and functions of the infrastructure, one should pay attention to one more important methodological peculiarity in justifications for its intercoordinated development with production.

It is justified, in our opinion, to assert that in the composition of the branches and from the standpoint of modern ideas, in the interbranch production complexes, there are special kinds of activity that fully meet the infrastructural criterion [15]. But they are purely specific and do not duplicate or substitute for the production, not to mention the social infrastructure. With varying degrees of priority, the infrastructure serves all consumers without exception, irrespective of their organizational forms or their departmental jurisdiction. Specialized kinds of it are in effect at the same time [16, pp 109-113]. Thus the existence of the infrastructure of the agroindustrial complex is generally recognized in economic literature [17].

The basic provisions of the USSR Energy Program for the long-range future earmarked a task of primary economic and political importance for the infrastructure of the fuel and energy complex—during the 1980's to increase the extraction of gas and petroleum in Western Siberia and to provide for its transportation into the European part of the country [18, p 4]. To do this the energy program envisions an optimal combination of various means of transportation into the European part of the country for a large quantity of energy resources from Siberia where there will be the basic increase in the volume of extraction of organic fuel [18, p 6]. It is justified to include in the purely specialized infrastructure of the construction complex today's significant number of organizations that are providing technical supervision and construction. According to data of the Gosstroyinspeksiya, more than half of the defects that are revealed are linked to the fact that the builders fail to observe the sizes indicated in the plans and the envisioned construction norms and rules for tolerances [16, pp 81, 82].

The arguments that have been presented make it possible, in our opinion, to establish a still significant degree of conventionality in the classification of the infrastructure into production and social since integration processes in the sphere of labor linked to the rendering of services are assuming ever stronger and frequently decisive features of interpenetration and mutual augmentation. Therefore it is logical to designate once again as an object of research the infrastructure complex as a whole, the more since such experience already exists in economic literature. "Under the conditions of a large-scale economy," S. S. Nosova correctly writes, "improvement of the infrastructure is possible only by taking into account the tendencies in the development of the unified unionwide national economic complex and only from this standpoint does it make sense to consider the infrastructure.... The fundamental property of the infrastructural complex is its integrity. Manifestations of infrastructural activity vary, and it is necessary to have a unifying factor in order to provide for this integrity.... By means of the infrastructural complex one provides for interaction and unification of economic processes that create the final social product" [19, pp 7-8].

Along with certain theoretical substantiations that reinforce the objective need to single out the integrated infrastructural complex, we have performed calculations of its dynamics and effectiveness at the national economic level over a prolonged period, separating the production and social infrastructures in their generally accepted classification (see Table 1). At the same time we solved the problem of adequate and commensurable quantitative expression of the most important parameters of the development both of the infrastructural complex as a whole and of its two most important constituent parts over a 15-year period (1971-1985) (Table 2). The indicators that are given require certain clarifications. The fact is that the production of material goods and the infrastructural complex are two macroconstituents of the process of expanded socialist reproduction on which, in the author's opinion, it would be expedient to conduct an analysis in keeping with the method proposed in this article. In Table 2 people employed in the national economy include members of families of workers and employees who are employed in private subsidiary agriculture [12, p 390]. The earnings of workers, employees and kolkhoz workers, according to our calculations, should be increased by the amounts of payments and benefits from public consumption funds, that is, they should reach the amount of the real incomes of the population—the national economic share of workers in the consumption fund of the utilized national income of the state.

Table 2—Economic Indicators of the Development of the Production of Material Goods and the Infrastructural Complex During 1981-1985* (millions of people employed; other indicators, billions of rubles, in prices comparable to 1973)

Indicator 1971-1975	1970	1975	1980	1985	Average Annual Growth rates, %		
	1976-1980	1981-1985					
I. Employed in:							
National economy	108.9	118.7	127.1	131.9	1.75	1.40	0.75
Production of material goods	68.6	72.4	75.0	76.5	1.10	0.70	0.40
Infrastructural complex	40.3	46.3	52.1	55.4	2.80	2.40	1.25
Production infrastructure	16.3	20.2	21.6	22.4	4.35	1.35	0.75
Social infrastructure	24.0	26.1	30.5	33.0	1.70	3.15	1.60
II. Wages of workers, employees and kolkhoz workers with the addition of payments and benefits from public consumption							
National economy	215.5	283.2	351.1	410.4	5.80	4.35	3.15
Production of material goods	130.0	166.3	200.9	231.9	5.05	3.85	2.90
Infrastructural complex	85.5	116.9	150.2	178.5	6.45	5.15	3.50
Production infrastructure	34.6	51.0	62.3	72.2	8.10	4.10	3.00
Social infrastructure	50.9	65.9	87.9	106.3	5.30	5.95	3.85
III. Net output created in:							
1) Production of material goods	234.4	300.8	352.1	413.6	5.10	3.20	3.30
2) Production infrastructure	47.1	70.8	106.8	132.5	8.50	8.55	4.40
IV. Net output created in the social infrastructure and evaluated in terms of the effectiveness of labor in material production	79.7	104.8	145.0	182.4	5.60	6.70	4.70
V. Evaluation of the total net output of the national economy (III.1 + III.2 + IV)	361.2	476.4	603.9	728.5	5.70	4.85	3.85
VI. Evaluation of the net output of the infrastructural complex (III.2 + IV)	126.8	175.6	251.8	314.9	6.75	7.50	4.60
VII. Production capital applied in:							
National economy	1071.8	1570.0	2176.8	2961.3	7.95	6.75	6.35
Production of material goods	502.6	772.6	1114.6	1547.3	9.00	7.60	6.80
Infrastructural complex	569.2	797.4	1062.2	1414.0	7.00	5.90	5.90
Production infrastructure	227.3	321.2	431.1	589.5	7.15	6.45	6.45
Social infrastructure	341.9	476.2	631.1	824.5	6.85	5.50	5.50
VIII. Economic potential (II + VII) applied in:							
National economy	1287.3	1853.2	2527.9	3371.7	7.55	6.45	5.95
Production of material goods	632.6	938.9	1315.5	1779.2	8.25	7.00	6.25
Infrastructural complex	654.7	914.3	1212.4	1592.5	6.90	5.80	5.60
Production infrastructure	261.9	372.2	493.4	661.7	7.30	5.80	6.05
Social infrastructure	392.8	542.1	719.0	930.8	7.30	5.80	5.30

* Calculated from figures from the statistical annual "The USSR National Economy" for the corresponding years.

As long as it is correct to evaluate labor from the standpoint of socially utilized national income, it is no less justified to evaluate the results of labor in the infrastructural complex from the standpoint of its contribution to the major source of socioeconomic growth—net output created in the sphere of material production. The new addition of the CPSU Program stipulates: "The entire system of management should be directed toward increasing the contribution of each

unit of the national economy to the achievement of the highest goal—the most complete satisfaction of the needs of the society. Comprehensively increasing this contribution with reduced expenditures of all kinds of resources is the immutable law of socialist management and the main criterion for evaluating the activity of branches, associations, enterprises, and all production units" [4, p 148].

After the 27th Party Congress the national economic significance of the social sphere was restored and measures are being taken to overcome the "residual principle" in allotting funds for its accelerated development. The Bureau of the USSR Council of Ministers for Social Development was formed and functions as an agency for national economic management. At the general annual meeting of the Division of Economics of the USSR Academy of Sciences, A. I. Anchishkin noted in his report: "It is necessary to revise the existing concepts of national income and national wealth and reflect in the dynamics of socioeconomic development effectiveness of the formation of the country's scientific, intellectual, and information potential." In the present development which is devoted to theoretical justifications for singling out the infrastructural complex, it is not yet possible to fully realize the aforementioned objective and just requirement. We are meeting it only partially—in evaluations of the net output as the result of reproduction in the social infrastructure and in accounting for it as a most important constituent part of national wealth in the composition of production capital. The position of scientific, intellectual, and information potential in the system of expanded socialist reproduction on the whole still has to be theoretically justified.

But in this connection it is appropriate to emphasize that the stereotype of the boundaries of expanded socialist reproduction should be revised in the direction of equal inclusion in its orbit, in actual socially productive labor, the final results of activity in the social infrastructure. Incidentally, according to existing classifications, in addition to other constituent parts, it includes scientific, intellectual and, to a considerable degree, information potential. Let us recall that in economic literature we have already published a considerable number of various methods for determining the volumes of services in the social infrastructure. But preference has been given to the method described below since it is simple and not labor-intensive, and the main thing—its application logically and organically interconnects the indicators presented in Table 2. The method is based on the important socioeconomic premise that human and material resources in the collective and individual sectors of the social infrastructure have national economic effectiveness of reproduction that is no less than it is in material production. This premise which is the initial one in this case is reinforced by the fact that according to materials of the all-union censuses, the level of education of people employed in the social infrastructure is higher than that of those employed in material production and the production infrastructure.

The volume of net output created in the social infrastructure is evaluated in terms of the effectiveness of labor in material production. Here the volume of services in monetary terms is determined according to expenditures of live labor under the condition of a unified norm for the effectiveness of the utilization of each unit of all kinds of resources in material production. Productivity

in the sphere of material production calculated according to net output is used as a measure of the national economic effectiveness of labor. Consequently, the determination of the net output of the social infrastructure as a value expression of the volumes of socially necessary services created in it is calculated on the basis of regularly published statistical indicators on labor and is based on a report of the mass of labor applied in the social infrastructure under the condition of the equality of its effectiveness in material production. A detailed description of this method and the results of the calculations from it have been published [20, pp 128, 129].

Having calculated by a compatible methodology and in unit prices the volumes of net output created in the production of material goods (industry, agriculture, construction) and by the infrastructural complex as a whole (separating the production and social infrastructures) and putting them together we obtain the total net output of the national economy which, in our opinion, is actually the final national economic result of reproduction processes and of the entire totality of socially useful activity. The evaluation of the net output of the infrastructural complex in the calculations is the sum of net output created by labor in the production and social infrastructures, although above we have presented important facts from recent times that justify their objective integration in terms of their nature and the results of labor into a unified infrastructural complex. The economic potential is the aggregate result of the production capital applied (fixed and circulating, that is, means and objects of labor) and labor according to the adopted system for its payment with the addition of payments and benefits from the public consumption funds.

A natural continuation of the evaluations and parameters given in Table 2 were the calculations of the economic effectiveness of indicators (in terms of separate positions) of live and embodied labor (Table 3). Attention should be paid to such an important methodological peculiarity. There is a widespread opinion in literature that the effectiveness of infrastructural activity is manifested primarily in the effect that appears for the consumers of these services. True, so far nobody has quantitatively singled out the proportion of this effect in the overall result of the work of economic and social systems. To reduce the problem of the infrastructural effect solely to eliminating losses is a necessary but not an adequate aspect of the research in determining the economic effectiveness, not to mention the social and general national economic effectiveness. We submit that calculations and analysis of the indicators of the position and quantitative significance of the infrastructural complex and its production and social constituents in the system of national economic reproduction are of no less scientific and practical significance under modern conditions for substantiation of the prospects for socioeconomic growth. Against this background reducing problems of the effectiveness of the infrastructure merely to the effect of investments is a particular case in the system of national economic calculations of the achievement of high final results.

Table 3—Dynamics of Indicators of the Economic Effectiveness of the National Economy, the Production of Material Goods, and the Infrastructural Complex During 1971-1985*

Indicator	1970	1975	1980	1985	In				
	1970	1975	1980	1985	of National Economy				
1. Labor productivity (rubles/man) in:									
National economy	3317	4013	4751	5523	100	100	100	100	100
Production of material goods	3417	4155	4695	5406	103	104	99	98	98
Infrastructural complex	3146	3793	4833	5684	95	95	102	103	103
Production infrastructure	2890	3505	4944	5915	87	87	104	107	107
Social infrastructure	3321	4015	4754	5527	100	100	100	100	100
2. Production capital-labor ratio (rubles/man) in:									
National economy	9842	13227	17127	22451	100	100	100	100	100
Production of material goods	7295	10671	14861	20226	74	81	87	90	90
Infrastructural complex	14124	17222	20388	25523	144	130	119	114	114
Production infrastructure	13945	15901	19958	26317	142	120	117	117	117
Social infrastructure	14246	18245	20692	24985	145	138	121	111	111
3. Output-capital ratio (kopecks/ruble) in:									
National economy	34	30	28	25	100	100	100	100	100
Production of material goods	47	39	32	27	138	130	114	108	108
Infrastructural complex	22	22	24	22	65	73	86	88	88
Production infrastructure	21	22	25	22	62	73	89	88	88
Social infrastructure	23	22	23	22	68	73	82	88	88
4. Return from economic potential (kopecks/ruble) in:									
National economy	28	26	24	22	100	100	100	100	100
Production of material goods	37	32	27	23	132	123	113	105	105
Infrastructural complex	19	19	21	20	68	73	88	91	91
Production infrastructure	18	19	22	20	64	73	92	91	91
Social infrastructure	20	19	20	20	71	73	83	91	91

* Calculated from figures in Table 2.

An independent object of calculations and analysis that arose from the theoretical premises that have been presented and the special task of this article were comparisons of indicators of the economic effectiveness of the development of production of material goods and the infrastructural complex (Table 4). They show first of all that in terms of the majority of parameters both the

complex suggested to be singled out and its constituent parts significantly lag behind the sphere of production of material goods although their dynamics are positive. Thus the organizational-economic formation of the infrastructural complex can, in our opinion, be an important, objectively necessary direction in the radical reform of national economic management.

Table 4—Ratio of Indicators of the Development of Production of Material Goods and the Country's Infrastructural Complex During 1971-1985* (production of material goods equals 1.00)

Indicator	1970	1975	1980	1985
Employees:				
Infrastructural complex	0.59	0.64	0.69	0.72
Production infrastructure	0.24	0.28	0.29	0.29
Social infrastructure	0.35	0.36	0.41	0.43
Wages:				
Infrastructural complex	0.66	0.70	0.75	0.77
Production infrastructure	0.27	0.31	0.31	0.31
Social infrastructure	0.39	0.40	0.44	0.46
Production capital:				
Infrastructural complex	1.25	1.14	1.06	1.01

Table 4—Ratio of Indicators of the Development of Production of Material Goods and the Country's Infrastructural Complex During 1971-1985* (production of material goods equals 1.00)

Indicator	1970	1975	1980	1985
Production infrastructure	0.39	0.37	0.36	0.35
Social infrastructure	0.86	0.77	0.70	0.65
Economic potential:				
Infrastructural complex	1.03	0.97	0.92	0.90
Production infrastructure	0.41	0.40	0.38	0.37
Social infrastructure	0.62	0.58	0.55	0.52
Net output:				
Infrastructural complex	0.54	0.58	0.72	0.76
Production infrastructure	0.20	0.24	0.30	0.32
Social infrastructure	0.34	0.35	0.41	0.44
Labor productivity:				
Infrastructural complex	0.92	0.91	1.03	1.05
Production infrastructure	0.85	0.84	1.05	1.09
Social infrastructure	0.97	0.97	1.01	1.02
Capital-labor ratio:				
Infrastructural complex	1.94	1.61	1.37	1.26
Production infrastructure	1.91	1.49	1.34	1.30
Social infrastructure	1.95	1.71	1.39	1.23
Output-capital ratio:				
Infrastructural complex	0.47	0.56	0.75	0.81
Production infrastructure	0.45	0.56	0.78	0.81
Social infrastructure	0.49	0.56	0.72	0.81
Return from economic potential:				
Infrastructural complex	0.51	0.59	0.78	0.87
Production infrastructure	0.49	0.59	0.81	0.87
Social infrastructure	0.54	0.59	0.74	0.87

* Calculated from figures in Tables 1 and 2.

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RESOURCE UTILIZATION, SUPPLY

Material Supply, Changes, Greater Marketing Discussed

18200061 Moscow

MATERIALNO-TEKHNICHESKOYE

SNABZHENIYE in Russian No 11, Nov 87, pp 24-30

[Article by B. Bogdanov, candidate of economic sciences, member of the Editorial Collegium of MATERIALNO-TEKHNICHESKOYE SNABZHENIYE: "Ownership and the Marketing of Means of Production in Material and Technical Supply"]

[Excerpt] Supply authorities need to take a more active part in the development, methods support, and implementation of an economic mechanism which by virtue of economic methods and incentives would motivate the sphere of material production to manufacture quality products and to deliver resources only in keeping with the needs of society. Solving this problem is unthinkable without further expansion of economic independence and responsibility of enterprises and authorities in the sphere of material production, the production infrastructure, and the credit-and-financial system.

The reference is above all to organization of the system of material and technical supply with respect to the circulation of commodities and the physical balance of production and consumption of physical resources, of credit-and-financial authorities with respect to the circulation of money and the physical-value balance, and of central economic and planning authorities with respect to the structural balance of production and consumption at the macroeconomic level.

The search is continuing for a mechanism to improve the balance of social production. Central economic authorities and a number of research institutes have gained experience. At the same time, it is striking that the problem of balance has begun to spill over into definition of the rules of the game at the macrolevel when the response is known or given in advance. It is not taken into account in this connection that we still lack an economic mechanism which reacts and exerts an active influence on changes of the organic structure of the productive plant when social production is organized on the market principle. In this connection a partial transfer of balances at the level of central economic authorities and inclusion of the so-called balance pyramid proposed by certain economists into planning practice does not unequivocally solve the problem by any means, although it does result in a further deepening of the division of labor, rights, and responsibility among them within the framework of the present organizational and management structure.

A somewhat different approach seems preferable.

A national economic complex that is unified with respect to methodology can be represented in the form of two interconnected informal subsystems reflecting to some degree the functioning of the two markets of physical resources—the state order and direct contract relations.

In the first of them, the principal material conditions are brought about for expansion of the process of socialist reproduction; state scientific-technical programs are carried out; and respect for national economic proportions and the country's defensive capability is guaranteed. Here, the plan drafted centrally on the basis of balances figures as the main regulator of the economy.

Economic methods of management are purposive in nature, and society is forced in some cases to take a road on which the product of production may not become a commodity or may be a commodity in some mystified form with the external attributes inherent in a commodity (value, price, and so on), unless the right of ordering in the current period is delegated to union sales components of USSR Gossnab operating on real and full cost accounting (*khozyaystvennyy raschet*) with the sphere of production. In any other case, the state order will serve as a "Trojan horse" for administrative methods of management in a market economy.

In that subsystem, USSR Gosplan and USSR Gossnab (each within the limits of its own jurisdiction and—consequently—responsibility) determine the list of state orders which are functional in nature. The products list only decodes the products necessary for achievement of the purpose of the order, as was in fact the practice in the programmed economy. Union-level entities are those who submit orders in their name for production of the products of that balance-related list of product indispensable to performing the tasks of the subsystem in the current or long-term period. Balances achieved here with all the levers accessible to society, and the material supply of production is accomplished centrally through the system of material and technical supply by exercising state priorities and through the economic relations of the state with suppliers of the physical resources and equipment indispensable to the purpose. Such products are distributed by USSR Gosplan and broken down to consumers by USSR Gossnab, and its soyuzglavsnabsbys exercise tight economic control and provide help in preparing the consumer for effective use of those products.

The question, then, arises: What authority is to draft and adopt 5-year plans for material and technical supply? Obviously the one which is capable and obligated to coordinate the plans for resource supply (physical, financial, and labor) with production plans and plans for capital construction. That would be USSR Gosplan. At the present time, USSR Gossnab does not have the capability of really guaranteeing the growth of capacities that is indispensable to eliminating and preventing shortages. That is why the viewpoint of many economists to the effect that in the subsystem of the functioning of

the state order, for all products of intersector purpose without exception the 5-year supply plan, broken down by years, must be compiled by USSR Gosplan and linked to the plan for growth of the respective capacities, seems rather well-founded. Aggregation of the items contained in the balance-related products list must not be allowed if those items pertain to different production capacities. Otherwise we will not achieve elimination of shortages, which have their root in disproportions between related capacities.

At the same time, the annual planning of supply with respect to all products of intersector importance should be concentrated in USSR Gossnab. The breakdown of 5-year supply plans by years, which would be done jointly with USSR Gosplan, would serve as the basis for working out annual balances and plans of distribution. The functions of USSR Gossnab come down to spelling out those plans in detail and breaking them down to those who are to carry them out and the actual practical realization.

Management in the second subsystem is performed with extensive use of commodity-money relations and with full cost accounting. The enterprise possesses the power to use, dispose of, and possess the results of labor, and it exercises that power on the competitive principle.

Here, the working out of balances of production and consumption of physical resources in current planning begins at the level of enterprises and production associations. Moreover, these balances must not be directive in nature, since balance at the enterprise level is ultimately the momentary state of the economy. The balance-related list of products is not permanently assigned to a particular level of management and production, but is mobile. The list at the higher level includes products for which the needs and resources could not be balanced at the previous level. The right to dispose of these products within the limits of socialist social ownership belongs with the producer (predominantly through contract relations with consumers) or is transferred on the basis of contract relations to the superior authority or to an intermediary, for example, to the appropriate component of USSR Gossnab. Economic independence of enterprises and production associations develops and is stimulated as balance improves in the production and consumption of their products combined with product renewal. Finally, centralized reserve funds can be created out of the profit of producers for economic stimulation of participants in social production on the basis of their contribution to meeting the needs and raising production efficiency.

The role of soyuzglavsnabsbys and regional components must increase in this connection as representatives of the interests of the state. But the soyuzglavsnabsbys, which are entities of mainly administrative management, must be turned into engineering and commercial centers representing the interests of society, the interests of the consumer and supplier simultaneously. Their activity in

this aspect is unthinkable unless they have cost-accounting relations on the basis of compensation with the sphere of material production proper, relations based on contracts with specific or consolidated (regional authorities and ministries) suppliers and consumers.

It has to be noted that the soyuzglavsnabsbys have some experience in this kind of effort. It is another matter that the purpose was somewhat different and gave rise to a certain unlawfulness of the cost-accounting relations of the sales components with regional authorities and the sphere of production. A sad example of a forced change of the formula of cost-accounting relations from contracts with ministries and all-union industrial associations to intrasystem cost-accounting relations with regional authorities occurred in 1979-1980, when relations of sales components based on compensation with the production sphere were curtailed.

Limitation of the economic motivation to perform this effort later led to a weakening of the extradepartmental functions of soyuzglavsnabsbys. They were gradually transformed from centers for determination of the need of society and for protection of the interests of the consumers in that regard to departmental accounting organizations of a kind which did total up the requirement, but the sales components no longer were economically accountable for the social character of the determination and formation of that requirement. This economic act, in spite of its apparent insignificance, has had a quite substantial impact on development of the system of material and technical supply, since trends in development of the economic mechanism which were not evaluated altogether correctly set back by many years the solution of the problems of economic accountability of central economic components for the formation of production plans.

What is more, the sales components must become centers for the organization of wholesale trade in the means of production possessing a sizable amount of their own working capital in the form of financial and physical resources, and it is those resources which will eventually determine the upper limits of their economic accountability for organizing the effective circulation of physical resources in the country.

In future, as experience is gained in this kind of operation, union-level sales components, relying on the network of regional authorities, could become socialist commodity exchanges which by economic means would guarantee delivery of products of inequality if the delivery contract was recorded on the exchange, and the suppliers' products are sold at prices based on socially necessary expenditures and standard profitability altogether independent of the subsystem for the functioning of the order.

In this case, there is no longer a need in the system of material and technical supply to maintain at the center and locally the unproductive and clumsy apparatus for

monitoring product deliveries. The monitoring functions would be absorbed by the functions of economic organization and regulation of deliveries under contracts with the industrial enterprises which are suppliers independently of the subsystem in which they function (the state order, direct contract relations, or orders from consumers) and of the forms of the material and technical supply of social production implemented on the basis of the commodity and with the help of money.

Consequently, the system of material and technical supply has to master economic methods of managing the sale of the product in regional components and on the scale of the national economy.

The conceptual apparatus and methods of that kind of management have long been known in economies with advanced commodity-money relations. They comprise marketing [in English in the original], which has been functioning successfully in a number of socialist countries: for example, in the People's Republic of China, in Hungary, and in Bulgaria, and is today a complicated, contradictory, and quite extraordinary phenomenon in their economic life. The economists of our country have also shown a noticeable interest in it recently, since it affords the possibility of real use of the many advantages of the scientific-technical revolution in the domain of organizing the management of production and sales of products on an economic basis.

For a long time, marketing was not included among methods for management of a socialist economy based on planning and specific assignment of production and distribution of physical resources and consumer goods, although to some degree it was present in concealed form even in the mid-sixties reform and the subsequent directive decisions mainly aimed at developing a broad market.

In a socialist economy the purpose of marketing is not to obtain maximum profit (which quite recently was the basis on which certain economists anathematized it, along with cybernetics, for example), but to actively bring about conditions through the system of material and technical supply for adjustment of production to the demand of society, to the ever growing requirements of the consumer in an economy of the intensive type, to develop viable systems for studying the conditions of supply and demand for means of production, to intensify sales, to improve the quality of means of production, and to increase competitiveness. That is why its principal functions are to study demand, to stimulate the sales of new technology and commodities with new or improved performance characteristics, to spell out in detail orders for the production of products, to plan commercial operations and the storage and transport of the commodity, and to organize consumer service.

It has to be noted that a substantial portion of these functions have long been performed to some degree by the system of material and technical supply and are

continuing to develop on a new and more flexible basis. An example of this is the more intense study of the demand of consumers for means of production for purposes of formation in regional components of the resource portion of wholesale trade, the vigorous expansion of communication capability for the use of data banks, expansion of production, information, and commercial services, and so on. From the organizational standpoint, elements of the development of marketing have also been observed in industrial enterprises operating under the new economic conditions. The recent large-scale economic experiment provided a thrust in that direction. They were manifested in the fact that sales and legal departments were spontaneously merged with production departments, or the former became subordinate to the deputy manager for production affairs.

In the marketing context the new methods of economic activity can extend more fully to all participants in production, and the system of material and technical supply would be able to exert a more vigorous influence on the country's central economic and sectoral authorities in that production plans would be formed on the basis of orders reflecting the real needs of society, to transform the present structure of consumption of physical resources into an economic structure, and in turn to exert an impact through it toward progressive changes in the structure of social production. Deliveries must be organized on an economic cost-accounting basis in which the principles of equivalent value and compensation would be guaranteed. This will make it possible for the system of material and technical supply on the one hand to become an organic part of the cost-accounting organization of expanded reproduction at the level of enterprises, associations, and sectors and would help it to develop, that is, to become an effective element of the economic mechanism. On the other, it would promote implementation of the cycle formulated by the June (1987) Plenum of the CPSU Central Committee: "Scientific research—investments—production—sales—service." There is no shorter or more accurate definition of contemporary marketing in our opinion.

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07045

Supply System Faulted: Wholesale Trade, Direct Contacts Needed

18200062 Moscow *PLANOVYE KHOZYAYSTVO* in Russian No 11, Nov 87 pp 59-69

[Article by S. Anisimov: "The Supply System and Tasks in Restructuring It"; first paragraph is *PLANOVYE KHOZYAYSTVO* abstract]

[Text] Ways of improving the system of supply and eliminating shortages in this sphere. Wholesale trade in means of production as the main direction for restructuring the material and technical supply of the national

economy. New approaches to formation of physical balances. Broadening the boundaries of enterprise independence in establishing economic relations related to product deliveries. Changing the functions of supply-and-sales components.

The Basic Directions for Radical Restructuring of Management of the Economy, approved by the June (1987) Plenum of the CPSU Central Committee, and the USSR Law on the State Enterprise (Association), adopted by the Seventh Session of the USSR Supreme Soviet, set clearly stated directions for radical reform of management of the economy.

The basic unit of the economy—the enterprise—is taken as the point of departure for restructuring. It is the enterprises that create all the necessary economic conditions for effective production activity. And it is on that basis that radical changes are being defined in operation of the other levels of management.

Enterprises are being granted broad rights to develop their own economic initiative on the basis of full cost accounting (*khozyaystvennyy raschet*) and self-financing. They now have been given the opportunity to draft and adopt plans for production and product sales on their own, to build up economic incentive funds at rates that remain in effect for a long time, and to dispose of the financial resources they have earned. The broadening of the limits of enterprise independence is being accompanied by an increase in their responsibility for the results of their economic activity and for the fuller satisfaction of consumer demand for efficient, high-quality, and competitive products.

But the additional rights extended to enterprises do not guarantee an increase in their effective activity. Much depends on such factors as the finance-and-credit mechanism, pricing, and material and technical supply, since all entities in the economic mechanism are interconnected. Any misstep in one of the levels will ultimately and unfailingly affect the operating efficiency of the entire mechanism. A particular feature of the present restructuring in the economy is precisely that comprehensive and radical changes are being made in all its levels.

Material costs represent the major portion of the product's production cost. That is precisely why the problem of bringing about reliable material and technical supply of enterprises is being advanced to one of the first places in the economic mechanism.

Granting enterprises the right to independently dispose of their own financial resources has immense importance. This means that the work collective may decide questions of social welfare, retooling, and reconstruction of the enterprise at its own discretion. But the question arises: How in fact is it possible to exercise that right when the existing system of rigidly centralized allocation of stocks of all physical resources has not been allowing

the enterprise to freely purchase the metal, timber, cement, or any other physical resource it needs to carry out its plans with the money it has?

Given the rigid centralization of means of production, to acquire them every enterprise has had to go up a long chain consisting of a multitude of organizations, establishments, and offices to be given allocations and to obtain the resources. As a rule it takes between 8 and 10 months to obtain the order for delivery of the resources from the moment when the request is submitted for physical resources. The planning of production and delivery by directive for every product and product mix has resulted in actual detachment of the consumer from the manufacturer. Any change in the assortment delivered had to go through the central authorities, which meant large expenditures of time and labor. It is clear that when planning is done and supply is organized in that way, there cannot even be any question of prompt response.

At the plenum of the CPSU Central Committee held this June the unreliability of the present system of material and technical supply was noted as one of its most serious defects. Every year consumers have failed to receive millions of tons of rolled metal products, hundreds of thousands of tons of steel pipe, tens of millions of cubic meters of timber, and other exceedingly important physical resources necessary for their production. Deliveries under contract obligations have regularly failed to take place, the supplier's dictate has prevailed everywhere, so that the consumer is forced to take any commodity, even if it is substandard. The unreliability of the system has given rise to an army of "pushers" numbering in the millions; they "shake down" the product the consumer is entitled to by every means, fair and usually foul.

At the same time, it cannot but be noted that the situation in this regard has improved noticeably thanks to the measures taken recently to put order in deliveries and to strengthen delivery discipline. Whereas at the beginning of the 11th FYP the annual short delivery of products amounted to 17-18 billion rubles, and about half of the enterprises failed to meet their contractual obligations, by the end of it the share of undisciplined suppliers had dropped to 31 percent. In the 1st half of this year less than one-fourth of the enterprises failed to meet targets for product delivery.

But the situation with fulfilling delivery plans remains strained. In spite of the comparatively lower percentage of enterprises not fulfilling their contractual obligations, the total volume of goods not delivered in the 1st half of 1987 amounted to 6.6 billion rubles. As in the past there was an evident drive for gross indicators at the expense of fulfilling contracts. For instance, the plans of USSR Minchermet delivered to the national economy almost 400,000 tons of rolled products over and above the plan in the last 6 months, but they failed to ship nearly 1.5 million tons called for by orders. Only 30 percent of the 63 basic suppliers of basic metals entirely performed

their contracts, and the share of the latter was 14 percent in the total volume of deliveries. It is evident from these figures that the prompt suppliers are mainly small enterprises. And the major suppliers have seriously let down those with whom they do business. Of course, if we compare the present situation to 1981, when the short delivery of rolled products amounted to more than 8 million tons, the situation is somewhat less disturbing. But it is well-known that the short delivery of quality rolled products amounting to 1.5 million tons in the 1st half of 1987 had an adverse effect on operation of the machinebuilding complex. For example, in spite of fulfillment of the semiannual target for delivery of hot-rolled bearing steel to the economy, four of the six suppliers fell substantially short in making deliveries of it. The plant "Dneprospetsstal" alone failed to ship anything for 25 of the 182 items, and was short 1,360 tons in delivery of 6,900 tons of bearing steel. This disrupted the production of bearings extremely necessary to the economy, and this in turn had an impact on the output of many types of equipment and machines.

The metallurgists also let the machinebuilders down concerning delivery of stainless steel sheet and sections, black plate and tinplate, bars used in machinebuilding, cold-rolled steel sheet, etc.

The poor discipline of suppliers and the irregularity and nonfulfillment of delivery targets have had the result that a hoarding psychology has been developed in the consumer as a kind of protective reaction. Many managers in the economy are striving to build up the best stocks of physical resources they can in order to insure themselves against a short delivery of raw materials, supplies, fuel, and components they need. Here the connection between violations of delivery discipline and the accumulation of stock can be traced very clearly. In the 11th FYP, when the situation with deliveries was unsatisfactory, the growth of stocks of commodities and supplies exceed the growth of production, and only in 1986, when fulfillment of contracts tightened up somewhat, did the opposite pattern begin to be observed: the growth of production began to exceed the growth of inventories, though only slightly. But inventories in the national economy are unjustifiably large; they have already reached 470 billion rubles (within that figure, production inventories amount to 189 billion rubles, or 40 percent).

The unreliability of the supply system is also related to the outdated forms and methods of planning work. Consumers have "been taught" that obtaining allocations still does not guarantee that they will obtain resources. As a practical matter a majority of physical balances include unrealistic resources. But since the actual resources are less, it is impossible to achieve full coverage of allocations in the period when consumers are assigned to suppliers. Thus the unreliability of supply is quite often predetermined in the stage of drawing up plans for material and technical supply. For example, in the current year it was well-known even in the stage of shaping the plan for production of paints and varnishes

that there were not enough white pigments to produce paints and varnishes in the volume outlined. The volume of production of paints and varnishes could not be reduced, since they actually are very necessary to the economy. As a consequence, a plan was approved that was internally inconsistent. Small wonder that the output did not occur when the necessary raw material was lacking! The formal distribution of resources has had the result that market allocations have not been altogether realized in physical form, machinebuilding found itself in the most difficult situation because of the shortage of paints and varnishes, and the plan for production of equipment and machines was in danger of nonfulfillment. Considerable efforts were needed to make up the imbalance incorporated in the plan to some extent and at an expensive price by importing additional white pigments.

Or another example. It was sufficiently clear when the plan for 1987 was being shaped that the "counterplan" and additional targets imposed on USSR Minlesbumprom were unrealistic. The memory of previous years was too fresh in memory, when the ministry was unable to correct the situation and for a number of reasons was repeatedly unable to meet the plan for delivery of timber and lumber to the economy and fell short tens of millions of cubic meters. By tradition, the plan for resource distribution has been compiled so as to take into account an additional target and "counterplan" which enterprises have not themselves adopted. Now the fruits of this kind of "balance" have to be gathered: the shortage of resources for delivery amounted to more than 14 million cubic meters. In the 1st half of the year the national economy failed to receive about 6 million cubic meters of commercial timber and 1.4 million cubic meters of lumber. And if we add to this the extremely uneven delivery of products by the components in charge of the allocations, then this kind of organization of supply deserves harsh condemnation. How, one wonders, can the enterprises of USSR Minsvyaz operate normally if they have received only 48 percent of the resources, or the machinebuilders when the level of delivery to them is 65-85 percent? The low level of delivery of allocated stocks has had the result that consumers have been trying to find a way out, usually by overstating their actual need, trying to obtain the largest possible allocations, and this ultimately gives rise to imbalance between the need that exists and the actual resources. A vicious cycle is formed from which planning and supply-and-sales authorities sometimes are unable to extricate themselves.

The unreliability, clumsiness, and conservatism of the system for material and technical supply have become an impediment in development of true cost-accounting relations between manufacturers and consumers. That is why it needs to be radically restructured and brought into conformity with the new economic conditions. Otherwise there is no reason to expect constructive results from the effort of enterprises under the conditions of cost accounting and self-financing.

The June (1987) Plenum of the CPSU Central Committee defined as the main direction in restructuring material and technical supply a resolute transition from centralized allocation of material and technical resources and the assignment of consumers to suppliers to wholesale trade in the means of production. Transition to that form of supply is to be completed over the next 4 or 5 years.

Why was wholesale trade selected as the main direction for restructuring material and technical supply? Before answering that question it is advisable to dwell in detail on a definition of the nature of wholesale trade. In the decree of the USSR Council of Ministers that came out in March 1986 and was entitled "On Transition of Associations, Enterprises, and Organizations of Certain Ministries and Departments to Material and Technical Supply Through Wholesale Trade Procedure" the following distinguished characteristics of it were pointed out:

- i. consumers are to be supplied without allocations and limits;
- ii. supply is organized through regional components of USSR Gossnab;
- iii. enterprises are required to use resources strictly for their stated purpose: to meet production needs and for repairs and operating needs.

The materials of the June (1987) Plenum of the CPSU Central Committee and the decree of the CPSU Central Committee and USSR Council of Ministers adopted on 17 July 1987 and entitled "On Restructuring Material and Technical Supply and the Activity of USSR Gossnab Under the New Economic Conditions" are helping to better understand and clarify the particular features of the organization of wholesale trade. That decree contains the following definition: wholesale trade is a form for furnishing material resources to consumers without limits (allocations) and is conducted directly by manufacturing enterprises or by material and technical supply authorities on the basis of direct orders submitted to those entities by consumer-enterprises.

What is new about this way of stating it is that the right to carry on wholesale trade is being extended not only to regional components of USSR Gossnab, but also to the manufacturing enterprises directly.

This addition makes it possible to substantially simplify the procedure of material and technical supply and to make supply more responsive. The experience of USSR Minstroydormash under the conditions of wholesale trade shows that the reserves for increasing the responsiveness of supply exists not only in eliminating the "card" system of resource distribution, but also in bringing the consumer closer to the supplier. The transition to the procedure for supplying the enterprises of this ministry without allocations afforded the possibility of

reducing paperwork by 100,000 units thanks to elimination of the system of requests for allocation of stocks and the breakdown of those allocations. The elimination of advance requests for resources and transition to the system of orders in the course of operation to obtain products from delivery enterprises of USSR Gossnab improved the promptness of supply. But the procedure for supplying enterprises on the basis of transit deliveries did not change. Detailed lists were submitted as before to regional components, which sent them to soyuzglavnabsbys for the orders to be made up. The consumers were just as detached from the suppliers as they had been before. The orders were filled through two intermediaries and took several months. Now that the consumer is being extended the right to send his order directly to the supplier, the procedure for material and technical supply is being substantially simplified, which makes it possible to reduce the paperwork still more, to improve the promptness with which supply problems are dealt with, and to reduce the expenditures of managerial labor.

The phrasing contained in the Basic Principles of Radical Restructuring of Management of the Economy, adopted at the plenum, has also substantially facilitated a correct understanding of the nature of wholesale trade. To be specific, it sets down the basic principle that wholesale trade in means of production is conducted in the form of free purchase-sale under direct contract between producer and consumer, under contract with intermediaries, above all with the enterprises of regional supply-and-sales components, and through outlets of manufacturers themselves.

Thus the essence is that wholesale trade must be conducted in the form of a free purchase-sale transaction. Up to now, because resources for wholesale trade were allocated for stated purposes, components of USSR Gossnab required of consumers calculations to substantiate their stated need. In the light of the phrasing indicated such as requirement will be unnecessary as wholesale trade develops further. The enterprise is granted the right to submit an order for the resources it needs at its own discretion. Here it is assumed that cost accounting and reliability of supply will have a favorable impact toward eliminating the practice of overstating the enterprise's need. Success cannot be achieved here without adoption of effective measures. That same USSR Minstroydormash can serve as a vivid example. As is well-known, this ministry did not convert to cost accounting and self-financing in the current year, and that was one of the reasons for the growth of its production inventories. Taking advantage of the fact that the material resources of this sector were entirely supplied through wholesale trade, and because the enterprises did not cope with their production plans, in the 1st half of the year they increased their above-allowance inventories by almost 90 million rubles. Remainders of rolled products of ferrous metals alone increased 100,000 rubles. The poor discipline of transit deliveries in the 1st half of this year, of course, also had an influence here.

Lapses in shipments of metal by the plants of USSR Minchermet forced the consumer to build up reserve stocks "for whatever might come."

A new rule has been adopted: wholesale trade may be organized by USSR Gosagroprom for its own subordinate enterprises converted to cost accounting and self-financing, bypassing components of USSR Gossnab. It is recommended that this form of supply also be applied to councils of ministers of union republics and to ministries and departments. USSR Gossnab has an obligation to coordinate the entire effort of developing wholesale trade.

Wholesale trade makes it possible to simplify the entire supply system to the maximum. It is this form of material and technical supply that is most optimal for enterprises in the context of cost accounting and self-financing.

Experience of operations in the context of wholesale trade over the first 6 months of this year by 10,000 enterprises has demonstrated its advantages. Supply has become more reliable. It should be noted that the personnel of components in the system of USSR Gossnab have begun to pay more attention to the problems of supplying physical resources to enterprises. Whereas previously no small efforts were extended to prove that the requirement had been overstated, now those efforts are spent on the specific work of filling orders promptly and observing the conditions envisaged by contracts. The elimination of allocations has made it possible for regional authorities to improve the maneuverability of resources. The punctuality of supply has improved considerably.

But still one cannot fail to see the difficulties in organizing wholesale trade. The first of them is the complexity and lengthy paperwork involved in transit deliveries. The way to simplify the filling of product orders is well-known. We have already spoken about it above: the transition needs to be made to direct "consumer—manufacturer" orders.

Things are not so good with the discipline of transit deliveries. There have been constant failure to supply consumers both through interministry and also intraminsty cooperation. Often suppliers do not fulfill their obligations under contracts concluded (with respect to the list of products); it is rather easy for them to undertake to pay the 8-percent penalties for short deliveries and to continue "drive for gross output." This can be said with confidence: the measures being taken to strengthen delivery discipline have not taken hold as yet. In our opinion, the principal reason for this is that industry has not yet made the transition to the new economic conditions, and suppliers are interested in volume indicators more than anything else. As the transition is made to cost accounting and to the new operating conditions in which the enterprise will itself draft

and adopt the production plan, combining it with contracts for deliveries, the situation with contract performance must improve. The greater responsibility of suppliers envisaged in the USSR Law on the State Enterprise (Association) will also contribute to that. Enterprises will be economically accountable for failure to perform contract obligations, they will reimburse the loss to the consumer according to established procedure, and delivery shortages will be made up in physical form.

Half a year of experience in operating under the conditions of wholesale trade has shown that proper procedure does not yet exist in supplying physical resources to consumers in nontransit quantities either. Although certain changes for the better have been observed, the level of organization of wholesale trade through delivery enterprises of regional components still does not meet present-day requirements. There have been cases of refusal to set aside resources, tardy delivery from depots, and a bureaucratic attitude toward consumers. A great effort is being made to overcome the evils that exist, but there are quite a few problematical questions.

There is a great urgency now to create optimum inventories of raw materials and supplies at enterprises of supply-and-sales components. Their volume at the present time is 5.5 billion rubles, or 1.2 percent of total inventories in the economy. Since the resources in possession of USSR Gossnab can be used more mobiley to satisfy the needs of enterprises, it would be advisable to increase somewhat their relative share by curtailing inventories of industrial enterprises. That task was in fact set in the decree of the CPSU Central Committee and USSR Council of Ministers referred to above, which calls for optimum placement of inventories in the national economy in order to increase their concentration in the nationwide system of material and technical supply and on that basis to make resources more mobile. It is indispensable here that the inventories be in a certain mix that guarantees reliable and regular supply of consumers.

It should be noted that the components of USSR Gossnab have not yet made the preparatory effort they should have in this direction, and this was one of the reasons for lapses in regular delivery of resources to consumers converted to supply through wholesale trade. What is more, regional authorities are still making little use of their opportunities to maneuver resources; quite often they are satisfied with the situation in which some consumers who have not converted to the new economic conditions have large above-allowance inventories, while other enterprises are experiencing considerable difficulties because of the shortage of physical resources.

The problems of breaking down the assortment of products, of furnishing consumers the supplies they need in small amounts, are not being dealt with satisfactorily either, although this problem touches upon the real needs of all enterprises, regardless of whether they have been converted to supply through wholesale trade. The

decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Improving the Responsibility of Associations, Enterprises, and Organizations for Fulfillment of Contracts for Delivery of Products and Commodities," which obligated USSR Gossnab to make the transition to supplying consumers resources in quantities below the so-called "carlots" through delivery enterprises of the system of USSR Gossnab, was adopted in June 1986. The effort was to be completed in 1988, but progress has been extremely slow. At the same time, cases have become more frequent in which supply-and-sales components compel consumers to consolidate their orders to bring them up to the transit quantities. This practice results in creation of unnecessary above-allowance inventories held by consumers, which is altogether unacceptable, especially at a time when enterprises are making the transition to cost accounting and have to be thrifty with every kopeck.

The reliability of material and technical supply in the context of wholesale trade depends quite a bit on the kind of service consumers are given and on procedure in enterprises of supply-and-sales components. Yet there are quite a few shortcomings in their work. At many depots products are stored in an extremely unsatisfactory state, and spoilage and resorting occur. There are cases when consumers receive resources which do not correspond to their orders. There is not the interaction there should be between regional components of USSR Gossnab and its soyuzglavsnabsbys, problems in setting resources aside for wholesale trade are being dealt with slowly, and as before, in the spirit of the worst traditions, every possible document, substantiation, and computation is required. Quite often supply authorities and authorities for management of the economy take a passive position in seeking out additional resources.

The transition from rigid allocation of stocks to wholesale trade in means of production is being accomplished in order to reduce excessive inventories of commodities and supplies in the economy and in order to eliminate the shortage of physical resources.

The purpose of wholesale trade is to become an important instrument making it possible to increase the impact of the consumer on the producer, to achieve a dynamic correspondence between supply and demand, to guarantee every enterprise a real opportunity to acquire within the limits of its financial resources the material and technical resources that fully meet its needs and development plans. The solving of this problem depends now on optimum organization of the effort. A favorable result can be achieved only with guarantees of complete and punctual fulfillment of contracts for product deliveries. As soon as the consumer is actually convinced of the reliability of material and technical supply, immediately he will no longer need to build up inventories and to overstate his need for resources. It is thus possible to state that the road toward balance lies through greater reliability of supply.

The document "the June (1987) Plenum of the CPSU Central Committee" speaks of two forms of distribution of physical resources: centralized distribution and wholesale trade. The planned basis for centralized distribution is the state order. As the new methods of economic activity are introduced and developed, the sphere of centralized distribution of resources is to shrink. The USSR Law on the State Enterprise (Association) stated that state orders guarantee satisfaction of priority needs of society, they are given to enterprises to activate production capacities and facilities in the social sphere financed with state centralized capital investments and also for delivery of certain products necessary above all to solve nationwide social problems, to carry out scientific-technical programs, to strengthen defensive capability, and to guarantee the country's economic independence, and for the supply of agricultural products.

It is a characteristic feature of state orders that they must be issued mainly for consolidated designations, and their inclusion in the production plan is mandatory. Enterprises are extended the right in centralized distribution of products to independently determine the assortment and dates for delivery of resources under contract with suppliers. This provision has fundamental importance. In the detailed order issued from above any change in assortment makes it necessary to go every time to the authority that issued the order and to fill out the forms for a revision of deliveries, which, as noted above, results in considerable expenditure of time and consequently detracts from operating efficiency. The transition to wholesale trade and to the system of state orders requires a radical change in the work of planning authorities and supply-and-sales components.

Up to now centralized assignment of consumers to suppliers has predominated. These functions mainly belonged to soyuzglavsnabsbys. Their duties included conducting joint studies with regional authorities of the detailed need for material and technical resources, to summarize that requirement, to clear with ministries and departments the volume of production and then to issue specifically addressed job orders for delivery of products to consumers. This time-consuming work takes many specialists away from their proper duties. It is sufficient to say that about 800,000 orders and subsequent changes in them were issued annually just for deliveries of rolled metal products, general metal goods, and pipe. The orders enumerated hundreds of types, grades, and sizes of products and the corresponding technical requirements.

Under the new economic conditions the agreement on the assortment of products to be delivered is being moved to the enterprise level. Soyuzglavsnabsbys are to issue only the plans for assignment of consumers to suppliers, and even that not for the entire volume of production capacities, but for the portion necessary to fill the state order and wholesale trade conducted by regional components. The remainder of production

capacities will be loaded with direct orders of consumers who need material resources in transit quantities. This concerns those consumers who are supplied with physical resources through wholesale trade and do not need intermediaries.

Another important function of soyuzglavsnabsbys which is being considerably broadened under the new conditions will be the working out of physical balances. In principle this is nothing new. Before the restructuring of supply began, their duties already included the working out of physical balances and distribution plans for the assigned product list. Now about 1,500 additional physical balances have been transferred from USSR Gosplan to USSR Gosnab, and their development has been made the responsibility of soyuzglavsnabsbys.

The procedure and technology for working out physical balances must undergo substantial change, since enterprises have been extended the right to independently form production plans on the basis of state orders and contracts concluded with consumers.

Up until now, in the context of directive planning, the resource portion of physical balances has been formed on the basis of production plans detailed by product approved by USSR Gosplan and by ministries. The volumes of the production plans were determined by calculating the need for particular products, often without taking into account the real capabilities of enterprises and the adequacy of raw material resources to back up the production plan. The nature of the "troubles" arising in such cases is evident from the examples given above concerning satisfaction of the need for forest products and chemical products. It is not so much computational methods as arbitrary methods that have predominated here. If there was a shortage of resources, a "way out" was found: unrealistic additional targets or the so-called "counterplan" were set, and a higher target was simply set for resource conservation. It is not, of course, difficult to compose such a "physical balance" on paper. It was sometimes declared with extraordinary ease that "we record exactly as much as is necessary!" But real life has inevitably made its corrections, and this kind of "supply plan," sewn, as they say, with "white thread," split apart along all the seams.

Beginning in 1988 the plan will be formed at the enterprise itself, and it will adopt it, so that it will not be possible to write down an arbitrary figure on the resource side. The old approaches to solving economic problems will be unsuitable for attaining balance between resources and the national economy's need for them: progressive new forms and methods of work will have to be sought out and introduced. It should be taken into account in this connection that with the reduction in the relative share of state orders the portion of the production plan determined by the enterprise independently will increase, and the role of physical balances will consist more and more of analyzing how balanced are the plans adopted by production enterprises. It is through

physical balances that it is possible to see how proportionally the national economy is developing and to perform the appropriate monitoring functions. At the same time, the role of the physical balance must consist of timely correction of disruptions of the necessary balance. The quality of balance will depend to no small degree on how closely connected those who draft physical balances are with the enterprises in the process of shaping the production plan.

Extension of the right to independently form production plans to enterprises gives rise to the need to establish the optimum dates for breaking down state orders and plans for assignment to production enterprises, since they must be the basis for drafting the plan. It also needs to be taken into account that the assignment plans will be issued for a consolidated products list, and enterprises will need a certain time to agree on the detailed portion of delivery plans, to conclude contracts, and to make preparations.

In the context of large-scale production typical of our national economy it is very important to establish economic relations which make good economic sense. Their structure will be quite crucial to the hauling distance, punctuality, and regularity of deliveries, to guaranteeing consumers products that correspond to their needs with respect to quality, and to the level and speed of turnover of aggregate product inventories and product preservation.

When resources were distributed centrally, supply-and-sales components were involved in determining the absolute majority of economic relations. Economic relations established with the full participation of supply authorities both for interministry and also intraminstiry deliveries became the most widespread. The shortcoming of such connections was that they were short-term in nature, and the consumer was essentially divorced from the supplier. Relations involving partial participation of an intermediary, which came to be called direct long-term economic relations, were more progressive. The consumer was able to clear with the supplier directly all the conditions of the delivery. These relations occurred mainly when consumption of the product was stable in nature, especially for enterprises with volume and large-series production. By the beginning of 1987 almost a third of products for production and technical purposes were supplied through such connections, amounting to more than 45 billion rubles in toto.

Direct long-term economic relations considerably improved the promptness of supply, and they gave enterprises the opportunity to render mutual services of a production and organizational nature aimed at raising production efficiency and conservation of physical resources and to stipulate convenient dates for delivery of products and additional requirements as to their quality.

At the same time, it has not been possible to obtain the full return from this progressive type of connections because of a number of shortcomings in the practice of organizing them. The absence of a firm 5-year plan of product production and distribution has had the result that along with the 5-year plans for assignment of consumers to suppliers the soyuzglavsnabsbys annually issued other parallel documents that actually represented delivery orders. Because of the substantial imbalance in resources there has recently been an excessively detailed specification of the assortment of products to be delivered. Quite often there have been cases of violation or changes of direct relations for various reasons. All of this restricts the independence of enterprises and creates a lack of confidence in the long-term nature of such relations.

In the context of restructuring of material and technical supply the task of developing direct relations is moving into the foreground. With respect to those products which remain subject to centralized distribution, direct long-term economic relations must become the principal form of relations between consumers and suppliers. But the functions of supply-and-sales components must be more clearly outlined. Their task is to assign the consumer to the supplier. All other questions concerning deliveries can and must be solved by the enterprises themselves both jointly and independently.

The USSR Law on the State Enterprise points out that enterprises are to determine the assortment and dates for delivery of centrally distributed resources independently, through contracts with suppliers. This law prohibits components for material and technical supply from arbitrarily revising the direct long-term relations of enterprises that come about.

In order to increase the effectiveness of direct long-term economic relations enterprises have now been extended the right: to transfer physical and financial resources among themselves on the basis of contracts concluded, to establish supplements (deductions) to centrally established wholesale prices for meeting additional requirements of the customer as to performance characteristics and the way the delivery is made up.

As the principal form of interaction of enterprises on matters of production and delivery of products, direct relations will also exist in material and technical supply through wholesale trade. We need to note that a majority of consumers know their suppliers quite well, are closely connected to them, and for all practical purposes can do without an intermediary. If up to now they have worked without an intermediary, this was because of the practice of allocation of resources through allotments. In wholesale trade this obstacle disappears, and enterprises have an opportunity to solve all the problems of material and technical supply among themselves independently. At their own discretion they can choose their supplier, and if mutual interest exists, they can conclude a contract or

a lengthy period of cooperation not only on questions of delivery, but also to improve the production technology and to master new products.

This type of economic relations is the most progressive, and as wholesale trade develops, it will become dominant in the everyday businesslike relations among enterprises.

Under the new operating conditions there will be substantial changes in the role and functions of the regional components of the system of USSR Gosnab. They must be transformed into the basic link of the system of material and technical supply and must become equal partners of industrial enterprises. It is in this connection that regional components are to be converted to cost accounting and self-financing in 1988. Their activity will be evaluated mainly on the basis of performance of contract obligations concerning product deliveries. Cost-accounting income will become the most important summary indicator of their performance and the main source of development of production and social welfare. In order to increase the motivation of regional components of USSR Gosnab to increase the effectiveness of serving consumers and in fuller utilization of the principles of cost accounting and self-financing, there are plans to revise the procedure for establishment and application of supply-and-sales supplements and deductions and also the rate schedules on services rendered by these supply components.

The principal functions of regional components will be organizing wholesale trade in means of production for consumers receiving products in nontransit quantities.

guaranteeing delivery of resources from the warehouse to fulfill the state order, and rendering production services, commercial services, and information services.

Performance of the tasks involved in developing wholesale trade and in continuous and reliable supply of consumers necessitates a consolidation and development of the material and technical base of the regional components and expansion of the network of breakdown depots, so that the entire assortment of supplies and products required would be concentrated in them. There is a need for broader development of a network of stores operating on commission to render services to consumers in selling unused products, to substantially increase the rental of appliances, apparatus, equipment, machinery, and other technology, and to organize information service to enterprises concerning the output of materials and products, the conditions for obtaining them, and the directions for their optimum use.

Implementation of the decisions of the June (1987) Plenum of the CPSU Central Committee and adoption of all the necessary measures for restructuring of the organization of material and technical supply constitute one of the important conditions for successful realization of the party's strategic course which has been set toward acceleration of the country's socioeconomic development.

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Ways of Decreasing Expenditures for Agricultural Production

18240048 Moscow *VESTNIK SELSKOKHOZYAYSTVENNOY NAUKI* in Russian
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[Article by S. S. Sergeyev, academician at the All-Union Academy of Agricultural Sciences imeni V. I. Lenin, Moscow Order of Lenin and Order of the Red Banner of Labor Agricultural Academy imeni K. A. Timiryazev (TSKhA): "Ways of Decreasing Average Expenditures in Production of Agricultural Products"; first paragraph is *VESTNIK SELSKOKHOZYAYSTVENNOY NAUKI* introduction]

[Text] Basic factors in increasing average expenditures per unit of output have been uncovered. Correlations in the change in expenditures per unit of the object of investments (hectare of area and head of livestock) and in productivity and proportions in labor productivity and wages have been determined.

The expanded reproduction of material wealth necessary for society presupposes production accumulations—use of part of the net product for an increase in production. The more refined the technical forms in which accumulation elements appear and the more fully scientific and technical progress is realized in them, the more significant this increase. To accelerate reproduction rates, it is necessary to increase the rates of growth of real accumulations, which is attainable by raising the economic efficiency of production. The all possible production intensification and mastering of resource- and energy-saving technologies are the basis for such a rise.

Scientific and technical progress represents in the full sense of the word the key factor in development and leads to qualitative changes in production, which raise its economic efficiency. In turn a rise in economic efficiency itself ensures scientific and technical progress economically, which accelerates the rates of expanded reproduction.

In connection with this two interrelated directions in scientific production activity have acquired primary importance, that is, putting into operation systems of machines, materials, and technologies, which give the highest economic effect; a rational and economically efficient organization of labor and all processes of production and sales of products with due regard not only for the fulfillment of assignments in terms of the volume, assortment, and quality of products, but also for a continuous and rapid growth of accumulations. The yield of products of a given quality per unit of aggregate (live and past) labor is the basic index of the economic efficiency of production. With a methodically correct

calculation the yield of net products (on a country-wide scale, the national income) per unit of live labor is very close to it quantitatively. However, the accounting practice of enterprises does not give such indices directly and instead uses production costs, the yield of products per unit of expenditures, labor productivity, and profitability.

Since profitability closely depends on the level of sales prices, while the productivity of live labor is abstracted from the efficient utilization of material elements of expenditures incorporating embodied labor, first of all, it is necessary to turn to the index of production costs.

Using production costs for an analysis of the economic efficiency of agricultural production, it is necessary to take into consideration the important characteristics of this index in the light of full, or actual, production expenses.

First, an evaluation of live and past labor (previously embodied in other national economic sectors) is not comparable in the index of production costs. Expenditures of live labor at an enterprise (including the enterprise's labor embodied in seeds and feed of its own production) are taken into account only in the amount of wages corresponding to the share of "labor for oneself." Expenditures of past labor embodied in means of production incoming from the outside and in production services are subject to an additional evaluation in the amount of the "share of labor for society" with deviations caused by the price formation practice.

Second, the accepted realization of additional net products intended for consumption in the form of an increase in wages, not through a reduction in retail prices, under the existing costing system leads to the inclusion of labor expenditures in production costs in a continuously rising evaluation. This eliminates the possibility of correctly judging, directly according to the dynamics of production costs, the change in the economic efficiency of production, although in two cases such a preliminary conclusion is still possible.

For example, if production costs basically remain the same, despite the fact that wages and production accumulation funds at the same sales and supply prices increase, it is possible to maintain that the economic efficiency of production rises. In turn, when production costs increase, it is possible to assume under the conditions of stability of the ruble's purchasing power either a decrease in economic efficiency, or an increase in wages outstripping its rise. This can occur through an intersectoral or intrasectoral redistribution of net products in favor of wages at the expense of the fund intended for production accumulation. Therefore, under any conditions, using production costs for an evaluation of economic efficiency, we must make an analysis based on elements of production costs in interconnection with factors determining its dynamics.

The program for the economic and social development of the USSR for the 12th Five-Year Plan envisages an 8-percent reduction in production costs of agricultural products. Meanwhile, for a long time production costs of all basic types of products, except for poultry products on sovkhozes, increased. In order to clarify the general reasons for the unfavorable dynamics of production costs and to substantiate the ways of reducing them, at first it is necessary to examine the change in average expenditures per unit of output. For this we will use the index of average expenditures

$$\frac{\sum z_i q_i}{\sum p_i q_i} \quad \frac{\sum z_i q_i}{\sum p_i q_i}$$

where z_i and z_i are production costs, q_i and q_i are the quantities of each type of product during the base period and the period under review, and p_i is the comparable price

Taking into consideration the fact that during the examined period some kolkhozes were reorganized into sovkhozes, it is advisable, for the comparability of the rates of change in total expenditures and gross output in these categories of farms, to take these indices per hectare of agricultural land. This will make it possible to simultaneously compare the rates of change in expenditures and in the yield of agricultural products per unit of agricultural area in every category of farms

From 1965 through 1985 expenditures for the production of agricultural products on the sovkhozes of the former USSR Ministry of Agriculture per hectare of agricultural land increased 3.5-fold, including in plant growing, 3.1-fold and in animal husbandry, 3.9-fold. The yield of agricultural products per hectare at the comparable prices of 1973 increased twofold, including of plant products, almost 1.7-fold and of livestock products, 2.2-fold. This led to a 1.8-fold rise in average expenditures per ruble of agricultural products, including 1.9-fold of plant products and 1.75-fold of livestock products

During that period expenditures per hectare of agricultural land on kolkhozes increased fourfold, including in plant growing, 3.7-fold and in animal husbandry, 4.25-fold, while the yield of products increased 1.75-fold, 1.7-fold, and 1.9-fold respectively. Such a correlation of the rates of change in specific expenditures per hectare and in the average yield of products brought about a 2.3-fold increase in average expenditures per ruble of output on kolkhozes, including 2.2-fold in plant growing and 2.3-fold in animal husbandry

On the average, on sovkhozes and kolkhozes the index of average expenditures was 2.10. As we see, the growth of expenditures per hectare of agricultural land in animal

husbandry, owing to a rise in its proportion, was considerably higher both on sovkhozes and on kolkhozes than in plant growing, although the indices of average expenditures between these sectors in every category of enterprises differ negligibly. The rate of growth of average expenditures on kolkhozes both as a whole and by sectors was higher than on sovkhozes.

The specific nature of the index of average expenditures lies in the fact that during both of the comparable periods output in it is taken at comparable prices, while expenditures, at current prices. In contrast to indices of production costs the index of average expenditures also includes to a certain extent the effect of the change in the assortment structure of production. Nevertheless, from the data cited it is possible to draw an unequivocal conclusion: Average expenditures per unit of output taken at constant prices rose considerably, because the increase in expenditures per unit of area greatly outstripped the growth of the yield of products.

Such an increase is not the consequence of specific meteorological conditions during the comparable years. It occurred successively from one period to another. As a demonstration of this we will cite comparable data on the change in average expenditures during the last 4 five-year plans.

Average expenditures per ruble of agricultural products on kolkhozes and sovkhozes increased as follows: in 1971-1975 by 24.5 percent as compared with 1966-1970; in 1976-1980 by 22.6 percent as compared with 1971-1975; in 1981-1985 by 22.9 percent as compared with 1976-1980. During every five-year plan they increased by almost one-fourth. During the 10th Five-Year Plan the rates of such an increase were relatively lower in plant growing (18.6 percent with 25.5 percent during the 9th Five-Year Plan and 26.6 percent during the 11th Five-Year Plan), because the growth of the average yield rose several points. At that time, however, they were much higher in animal husbandry (26.2 percent with 20.5 percent during the 9th Five-Year Plan and 19.3 percent during the 11th Five-Year Plan), where the growth of average productivity decreased.

What caused this tendency? What brought about the systematic substantial growth of average expenditures and the obvious noncorrespondence between expenditures per hectare and the return?

If we turn to labor productivity, from 1965 through 1985 in the public sector of agricultural production it rose 91 percent, that is, almost doubled, but, on the average, in 1981-1985 was 46.9 percent, or almost 1.5-fold, higher than in 1966-1970 and 1.9-fold higher than in 1961-1965. However, the same level of productivity of live labor defined as the ratio of gross output to its expenditures can be in case of a different amount of material expenditures embodying past labor and, consequently, in case of different economic efficiency. Therefore, on the part of products their yield per unit of live and past

labor characterizes actual national economic efficiency and, on the part of production expenses, expenditures of live and past labor per unit of output, or aggregate labor intensiveness.

As the calculations performed at the TSKhA Department of Statistics show, during the 11th Five-Year Plan these expenditures were 16 percent lower than during the 8th Five-Year Plan. Expenditures of live and embodied agricultural labor decreased by 31.1 percent and of nonagricultural labor (industry, construction, and other sectors) increased by 54.9 percent. The substantial increase in the power-worker ratio was the material basis for a rise in labor productivity. During three five-year plans (1970 as compared with 1965, 1975 as compared with 1970, and 1980 as compared with 1975) it increased 1.5- to 1.4-fold and only during the last 5-year period (1985 as compared with 1980) the rates became lower (+25 percent). On the whole, from 1965 through 1985 the power-worker ratio in agriculture increased 3.8-fold.

However, the rates of labor productivity growth not only lagged significantly behind the rates of growth of the power-worker ratio and the capital-labor ratio, but also declined systematically beginning from the 9th Five-Year Plan. For example, the rise in average annual 5-year levels of labor productivity in the public sector of production in relation to the indices of every preceding five-year plan comprised the following: during the 8th Five-Year Plan, 130 percent; the 9th Five-Year Plan, 122 percent, the 10th Five-Year Plan, 113 percent; the 11th Five-Year Plan, only 108 percent.

The rates of reduction in aggregate labor expenditures per unit of output also slowed down sharply, that is, 10.8 percent during the 9th Five-Year Plan, as compared with the 8th Five-Year Plan, and 6.5 percent during the 10th Five-Year Plan, as compared with the 9th Five-Year Plan. During the 11th Five-Year Plan, as compared with the 10th Five-Year Plan, aggregate labor intensiveness remained unchanged. This attests to the economically unfavorable situation created by that time, which requires fundamental measures for changing it.

The insufficiently high economic efficiency of newly commissioned implements of labor and their extensive use are some of the reasons for the significant reduction in the rates of labor productivity growth. This has brought about a growing lag in the rates of labor productivity growth behind the rates of growth of the power-worker ratio. The productivity of agricultural production, along with the capital-labor ratio, significantly affects labor productivity in agriculture. As is well known, along with the growth of power saturation, it depends on such key factors in intensification as the application of mineral fertilizers and plant and animal protection agents, land reclamation, high-yielding crop varieties, and highly productive animal breeds.

The average yield of products per hectare of agricultural land in the public sector increased by 36.9 percent during the 11th Five-Year Plan, as compared with the 8th Five-Year Plan. An increase in power supply (in 1981-1985, as compared with 1966-1970, per 100 hectares of sown area it was 2.7-fold higher), an increase in the amount of mineral fertilizers (in 1981-1985 their application in kg of the active substance rose 2.6-fold, as compared with 1966-1970), and a double rise in the proportion of irrigated land (from 1.8 percent in the total area of agricultural land in 1965 to 3.6 percent in 1985) became the material basis for such a growth. The varietal composition of crops and the breeding composition of animals changed significantly.

Examining the change in the average yield of products per hectare of agricultural land in the public sector of production, we would like to note that during the 8th Five-Year Plan this index was 23.2 percent higher than during the 7th Five-Year Plan, during the 9th Five-Year Plan, 16.2 percent higher than during the 8th Five-Year Plan, during the 10th Five-Year Plan, 12.6 percent higher than during the 9th Five-Year Plan, and during the 11th Five-Year Plan, only 4.6 percent higher than during the 10th Five-Year Plan. We would like to note that, if the growth of the yield of plant products per unit of area under equal weather conditions signifies an intensive form of development, behind the increase in the yield of livestock products per unit of land area there can also be an extensive development (a simple increase in livestock density without significant shifts in productivity or even with its decline).

Comparing the declining rates of growth concerning the yield of agricultural products per unit of area with the rates of labor productivity growth, we see that they are correlated closely. The following are important reasons for the general decline: a lack of an overall nature of investments, technically and, consequently, economically insufficiently effective elements of investments, a bad utilization of means of production, and serious shortcomings in the utilization of labor resources. The yield of livestock products increased basically owing to the growth of the livestock population, not the rise in productivity. During the 10th and 11th Five-Year Plans the rate of increase in mineral fertilizers supplied to agriculture was relatively lower (in 1970, as compared with 1965, their quantity per hectare of arable land increased by 64.8 percent and in 1975, as compared with 1970, by 65.6 percent. In 1980, as compared with 1975, the increase in fertilizers made up only 8.3 percent and in 1985, as compared with 1980, 34.9 percent). Absolute increases per hectare of arable land during the 9th and 11th Five-Year Plans are comparatively close (30.7 kg and 29.3 kg of the active substance). Less favorable meteorological conditions also had an effect during the 11th Five-Year Plan.

However, the serious slowdown in the rates of growth of labor productivity and the productivity of agricultural production in itself cannot explain the increase in the

prices of products, because labor productivity nevertheless rose, while aggregate labor intensiveness prior to the 11th Five-Year Plan decreased and, basically, remained at the level of the 10th Five-Year Plan only during the 11th Five-Year Plan.

Therefore, in principle, another two possible direct reasons for the price increase remain, that is, the growth of wages, outstripping labor productivity growth, and increase in the prices and higher expenditures of material elements concerning production of an industrial origin (including construction). The latter can also be connected with the outstripping growth of wages or increase in the profitability incorporated in the price in capital-forming sectors.

In fact, during the examined period average monthly wages on sovkhozes increased almost 2.5-fold (2.44), tripling on kolkhozes, that is, they increased approximately 2.7-fold in these categories of farms.

Comparing the indices of wages and of labor productivity, we will obtain the index of outstripping growth of wages as compared with labor productivity growth. On the average, in the public sector of agriculture it makes up approximately 1.4. During that time wages increased considerably in industry (twice) and in construction (2.1-fold), where labor productivity rose to an approximately the same degree. However, taking into consideration the rise in recalculations in industrial output and the significant changes in its assortment composition often accompanied by a hidden price increase, it can be assumed that, in fact, the growth of wages, as compared with labor productivity, also occurred in industry. In any event the unit of use value of means of production delivered to agriculture has undergone a significant price increase.

In order to evaluate the increase in expenditures of means of production of an industrial origin per unit of output, it is necessary to break down the general index of expenditures of means of production of an industrial origin into the index of the physical volume of these means and the price index. However, for a generalized description it is possible to make use of a comparison of the dynamics concerning elements of expenditures in production costs (in value terms) and in aggregate production expenses (directly in labor terms). Taking the data of the 8th Five-Year Plan as the base and the 11th Five-Year Plan as the period under review, we will

obtain, on the average, on kolkhozes and sovkhozes the index of average expenditures of means of an industrial origin, including depreciation, equal to 2.77 and the index of expenditures of labor embodied in these means, 1.55. Therefore, the index of evaluation of a labor unit (including the change in wages and in the accumulation fund in industry) will be 1.78.

By comparison, during that time the index of average expenditures for wages and for means of production of an agricultural origin was equal to 1.287 and the index of expenditures of live and embodied agricultural labor, 0.684, which gives an index of change in the evaluation of a unit of the indicated labor equal to 1.88.

At the expense of what elements of expenditures was their total value increased? In conformity with the adopted system expenditures are taken into account separately according to costing items. At the same time, the structure of expenditures according to elements, which make it possible to see their sectorial origin, has been given in annual reports for a long time. First of all, let us turn to the data on the change in expenditures according to costing items. From 1965 through 1985 expenditures in plant growing per hectare of agricultural land on sovkhozes and kolkhozes increased for all costing items. However, for the direct wage item the rates of growth were 1.5- to 2-fold lower than the average (2.4-fold on sovkhozes and 2.1-fold on kolkhozes), for seeds, at the level of the average (on sovkhozes, lower), for fertilizers, higher than the average (a 4.4- to 6.8-fold increase), and for other basic expenditures, including fuels and lubricants, motor transport, depreciation, and current repairs, also higher than the average (a more than fivefold increase). General production and economic expenses increased sharply on kolkhozes.

As a result, the structure of expenditures changed significantly. The proportion of expenditures for direct wages decreased 1.5- to 2-fold and the share of mineral fertilizers and other material elements of expenditures of an industrial origin increased. Basically, the structure of expenditures in animal husbandry changed similarly. The proportion of expenditures for direct wages was lowered even more, the share of material expenditures of an industrial origin increased approximately 1.5-fold, and the share of expenditures for feed also rose significantly. The share of general economic and production expenses more than doubled on kolkhozes. We shall cite more detailed data for 1970 and 1985 (table 1).

Table 1. Structure of Expenditures for Production of Plant and Livestock Products on USSR Sovkhozes and Kolkhozes in 1970 and 1985.

Costing item	All plant products				All livestock products			
	sovkhозес		kolkhozes		sovkhозес		kolkhozes	
	1970	1985	1970	1985	1970	1985	1970	1985
Wages (direct) with extras	23.8	15.8	37.9	24.2	23.0	15.2	30.1	22.1
Seeds and feed	15.9	14.4	12.9	13.0	49.9	52.2	43.1	46.7
Fertilizers	6.0	7.8	6.3	8.7	-	-	-	-
Depreciation of fixed capital	10.1	10.8	7.3	7.8	3.7	6.6	4.6	6.8
Current repairs of fixed capital	8.2	7.2	4.4	4.7	3.3	3.6	2.4	3.2
Other basic expenditures	23.2	33.3	19.3	31.4	10.7	13.8	9.9	11.4
General production and economic expenses	12.8	10.7	11.9	10.2	9.4	8.6	9.9	9.8

It is evident from table 1 that, as compared with 1970, the proportion of expenditures for wages decreased and for fertilizers, feed, and depreciation increased, especially in animal husbandry, and the proportion of other basic expenditures rose considerably.

According to 1985 data, in these expenditures fuels and lubricants comprise 2.8 percent of all the plant growing expenditures, motor transport, 4.9 percent on sovkhozes and 4.3 percent on kolkhozes, and the payment for services (work on freight transport, soil chemicalization, pest control, and current repairs made by outside organizations), 6.8 and 5.6 percent; insurance payments account for 6.7 and 7.7 percent and toxic chemicals, electric power, solid fuel, and other industrial products, for 3.7 and 4 percent. Out of the other basic expenditures of animal husbandry fuels and lubricants make up 1.3 percent of the total sum on sovkhozes and 1.1 percent on kolkhozes, toxic chemicals and drugs, 1.2 to 0.9 percent, electric power, solid fuel, and other industrial products, 3.1 and 2.2 percent, the payment for services (work on freight transport and current repairs), 1.9 and 1.6 percent, and insurance payments, 0.7 to 0.8 percent.

The data cited in table 1 do not create quite a correct idea of the role of agricultural labor. First, indirect labor expenditures included in expenditures for current repairs and general production and economic expenses are not visible here. Second, labor expenditures on one's own farm for seed and feed production are not reflected. Third, in contrast to material elements incoming from the outside, in which labor is evaluated with due regard

for the share for society, live agricultural labor and labor embodied in seeds and feed is evaluated only in the amount of labor for oneself. If these corrections are made, the share of agricultural, including past, labor will be much higher. The labor of workers directly employed in agriculture is reflected more fully, although by no means in an exhaustive manner, in the structure of expenditures according to elements. Here it is possible to see the change in the structure of material elements of expenditures according to their sectorial origin.

For example, from 1965 through 1985 the share of expenditures for wages in total expenditures (without insurance payments) for the production of agricultural products of the public sector was lowered from 47.8 to 32.9 percent and the share of material expenditures increased from 52.2 to 67.1 percent. Basically, the share of material expenditures increased in connection with the industrialization of agricultural production at the expense of industrial products (from 16.7 to 26.3 percent). However, the share of agricultural products hardly changed (25.2 and 25.1 percent). Out of industrial products the increase in industrially produced feed from agricultural raw materials was the most significant (12.6 percent in 1985 instead of 3.2 percent in 1965). The proportion of depreciation of fixed capital rose (from 10.3 to 11.6 percent). The proportion of industrial products in total expenditures (not counting the depreciation of fixed capital) comprised 26.3 percent and of agricultural products, 25.1 percent.

Let us examine the characteristics of the structure of expenditures in plant growing and animal husbandry separately on sovkhozes and kolkhozes (table 2).

Table 2. Structure of Expenditures for Production of Plant and Livestock Products on Sovkhozes* and Kolkhozes According to Elements of Expenditures in 1985.

Indicator	Plant products		Livestock products	
	sovkhозес	kolkhozes	sovkhозес	kolkhozes
Basic and additional wages with extras	28.7	37.5	24.3	34.2
Material expenditures, total	62.2	52.4	73.8	63.6
including:				
agricultural output, total	17.9	16.0	27.7	30.7
out of it:				
seeds and planting stock	16.0	13.6	-	-
feed	-	-	25.5	30.2
industrial output, total	21.1	19.1	34.6	22.7
out of it:				
mineral fertilizers	6.9	7.1	-	-
fuels and lubricants	4.2	3.6	1.3	1.1
industrially produced feed	-	-	25.9	16.1
out of it:				
mixed feed and grain processing products, including waste	-	-	21.5	13.0
toxic chemicals, biopreparations, and drugs	1.4	1.7	1.7	0.8
electric power and solid fuel	0.9	0.7	1.8	1.0
spare parts and materials (including building materials) for current repairs	6.0	4.1	3.1	2.5
payment for services	7.4	6.0	1.9	1.6
depreciation of fixed capital	15.8	11.3	9.6	8.6
Insurance payments	7.3	8.1	0.7	0.8
Other expenses	1.8	2.0	1.2	1.4

*Sovkhozes of the former USSR Ministry of Agriculture

Comparing the share of expenditures for wages in this table with the data of table 1, we see that in plant growing and animal husbandry on sovkhozes it is 1.8- to 1.6-fold higher here and on kolkhozes, 1.5-fold. In the expenditures of sovkhozes and kolkhozes the proportion of industrial products (not counting depreciation) became bigger than that of agricultural products. The share of industrial products in expenditures for animal husbandry on sovkhozes is much higher and, conversely, on kolkhozes still lower than of agricultural products, although with due regard for depreciation it is approximately equal.

However, if we take into consideration that agricultural raw materials account for the bulk of the cost of mixed feed and grain and waste processing products, we must admit that, ultimately, materials of agricultural origin predominate here.

Examining the structure of expenditures from the aspect of the labor contained in them, it should be kept in mind that a significant part of agricultural labor is embodied in material expenditures of an agricultural origin (including agricultural raw materials for feed preparation in industry). All agricultural labor, live and embodied in seeds and feed of internal production, is evaluated in the amount of wages, that is, without the share for society. We will add the payment for agricultural labor in seeds and feed to expenditures for the payment for live labor

and will make an additional evaluation of all live embodied agricultural labor and that contained in seeds and feed of internal production. Then the share of agriculture in full production expenses will make up more than 60 percent on sovkhozes and 70 percent on kolkhozes.

This is confirmed by direct data on the structure of aggregate expenditures for the production of agricultural products. According to the calculations performed at the TSKhA Department of Statistics, the proportion of live and embodied agricultural labor in production expenses of the public sector of agriculture comprises 66 percent. The following conclusion follows from this: Despite the comparatively small visible share of direct expenditures for wages, a sharp increase in labor productivity in agriculture very strongly affects a reduction in aggregate production expenses.

First of all, a sharp improvement in the quality and rise in the technical level of means of production of an industrial origin, an increase and a fuller utilization of the potential of plant and animal productivity, and an improvement in the skills and production activity of personnel are the basic factors in labor productivity growth in agriculture at present.

For a complete analysis of the dynamics of average expenditures it is necessary to note important characteristics in the change in the production costs of types of agricultural products (table 3).

Table 3. Dynamics of Production Costs, on the Average, Throughout Five-Year Plans (Chain Indices)

Type of product	Sovkhozes				Kolkhozes			
	in relation to in relation to in relation to in relation to		in relation to in relation to in relation to in relation to		in relation to in relation to in relation to in relation to		in relation to in relation to	
	1966-1970	1971-1975	1976-1980	1981-1985	1966-1970	1971-1975	1976-1980	1981-1985
Grain (without corn)	1.302	1.116	1.325	1.925	1.184	1.172	1.265	1.755
Raw cotton	1.183	1.208	1.275	1.823	1.125	1.111	1.185	1.481
Sugar beets	1.296	1.114	1.179	1.704	1.136	1.160	1.172	1.545
Potatoes	1.371	1.229	1.288	2.171	1.352	1.315	1.323	2.352
Vegetables	1.165	1.109	1.147	1.481	1.146	1.078	1.191	1.472
Gain in cattle	1.290	1.300	1.287	2.158	1.230	1.347	1.285	2.129
Gain in hogs	1.191	1.203	1.202	1.723	1.120	1.347	1.298	1.958
Gain in sheep	1.321	1.380	1.243	2.266	1.235	1.329	1.304	2.140
Milk	1.243	1.268	1.283	2.023	1.185	1.276	1.252	1.893
Eggs	0.924	1.016	1.016	0.955	0.986	1.125	1.086	1.205
Wool	1.386	1.427	1.263	2.498	1.295	1.373	1.313	2.334

These characteristics are largely determined by the distinctive quality of the dynamics of expenditures per unit of the object of investments (hectare of sown area or head of livestock) and the return on them (yield or productivity), which is connected with various levels of mechanization and intensification of the production of a specific type of product. Production costs of sheep products increased most significantly. During the 11th Five-Year Plan production costs per quintal of wool on sovkhozes were 2.5-fold higher than during the 8th Five-Year Plan and 2.3-fold higher than on kolkhozes and production costs per quintal of gain in sheep, 2.3- and 2.1-fold. No significant shifts in sheep productivity occurred during that time and labor intensiveness changed in an unsatisfactory manner (on kolkhozes in 20 years direct labor expenditures declined by only 5 to 6 percent and on sovkhozes labor expenditures in sheep raising and fattening rose 13.7 percent and for wool production, 21.4 percent).

Potato production costs increased considerably (during the 11th Five-Year Plan on sovkhozes they were 2.2-fold higher than during the 8th Five-Year Plan and on kolkhozes, 2.4-fold). This is due to the very small change in the yield (+4.3 percent on sovkhozes and +7.6 percent on kolkhozes) and high expenditures for planting stock and harvesting.

A significant price increase (2.2- to 2.1-fold during the 11th Five-Year Plan as compared with the 8th Five-Year Plan) occurred during the raising and fattening of cattle, where average daily gains on many farms remained at the previous, very low, level, while feed production costs increased continuously.

Rates of increase in pork production costs on sovkhozes, which concentrated a significant part of the pork production at large state livestock complexes established during the second half of the 1970's and sharply noted for a high economic efficiency, were much lower.

Poultry breeding on sovkhozes is the only sector, where production costs did not increase, but decreased. In 1985 egg production costs were 17.1 percent lower than in 1965 and, on the average, during the 11th Five-Year Plan, 4.5 percent lower than during the 8th Five-Year Plan. The development of poultry breeding through the establishment of state mechanized poultry farms shows convincingly what scientific and technical progress brings if it consistently encompasses all the aspects of production. A high concentration, specialization, mechanization, and intensification of production, breeding of highly productive poultry crosses, rations balanced in terms of nutrients, and other elements of a scientifically substantiated intensive technology during the 11th Five-Year Plan, as compared with the 8th Five-Year Plan, made it possible to increase the egg production of chickens 33.5 percent, to reduce direct labor expenditures to one-fourth, to significantly decrease feed expenditures per unit of output, and thus to lower production costs.

On kolkhozes, where the concentration, specialization, and intensification of poultry breeding are much lower, there is less success. However, even here the breakaway from the rates of increase in the prices of products of other sectors of kolkhoz production is highly clear. While average expenditures for livestock products on kolkhozes doubled during the 11th Five-Year Plan, as compared with the 8th Five-Year Plan, egg production costs increased only 1.2-fold. This is a direct consequence of the sharp rise in labor productivity (labor intensiveness decreased 2.2-fold) and of the significant growth of egg production (19.6 percent).

Evaluating the dynamics of average expenditures and economic efficiency on many farms, we would like to stress that to no extent do they meet modern requirements. It is no longer possible to accelerate production development and to raise wages without lowering expenses. Therefore, an important task was set during the 12th Five-Year Plan, that is, to break the tendencies of the preceding three five-year plans, where average

expenditures during each of them increased by one-fourth, and to lower production costs (on sovkhozes) and, accordingly, average expenditures by 8 percent, while increasing the average wages of workers and employees by 15 percent and of kolkhoz members by 18 percent, on the average.

Production costs of basic types of agricultural products sharply vary in the country's republics and regions. Average production costs per quintal of grain on kolkhozes in 1985 changed in the range from 7.4 rubles in the UkrSSR to 17.3 rubles in the Latvian SSR, of potatoes from 8.9 rubles in the BSSR to 39.5 rubles in the Turkmen SSR, of milk from 27 rubles in the Lithuanian SSR to 50.7 rubles in the Georgian SSR, and of gain in stocker cattle and hogs from 187.2 and 150.8 rubles in the Estonian SSR to 471 and 353.8 rubles in the Georgian SSR. Therefore, a definite reduction in average expenditures throughout the country can be attained through an increase in the concentration of the production of appropriate products in regions with production conditions most favorable for them.

However, as mass data, including groupings of kolkhozes and sovkhozes according to production costs, show, an increase in the yield of crops and productivity of livestock with a simultaneous relative reduction of expenditures per hectare of sown area and head of livestock through a reduction in prices, improvement in the quality, and efficient utilization of elements of expenditures, is of primary importance in the reduction in production costs. The main path to a significant increase in the yield lies in the mass mastering of intensive technologies in plant growing and animal husbandry. In many cases, however, intensive technologies in plant growing do not yet ensure shifts in production expenses and are not satisfactory in their economic parameters. Therefore, it is necessary to refine and increase the economic efficiency of sets of machines, to utilize them correctly, to improve the skills of personnel in every possible way, and to interest machine operators and technologists in maximally lowering production expenses.

The experience of highly productive, new production subdivisions—intensive-labor collectives—opens up big opportunities in this respect. They were discussed in detail in No 5 of the journal in 1987.

Complexes noted for an improved technical base and a higher concentration and specialization established during the years of the 9th and 10th Five-Year Plans operate according to intensive technologies in animal husbandry. The basic economic indices of complexes during 1985 and the preceding 7 years, as compared with the average indices of sovkhozes and kolkhozes, point to significant advantages.

The average daily gain in feeder hogs at sovkhoz complexes in 1985 was 29.6 percent higher than, on the average, on sovkhozes, at kolkhoz complexes, 16.2 percent higher as compared with kolkhozes; at cattle fattening at sovkhoz complexes, 34.7 percent higher than on

sovkhозes, and at kolkhoz complexes, 9.2 percent higher than, on the average, on kolkhozes. At dairy complexes of sovkhozes the yield was 21.5 percent higher than on sovkhozes and at kolkhoz complexes, 19.5 percent higher than, on the average, on kolkhozes.

Complexes greatly surpass sovkhoz and kolkhoz livestock sections in labor productivity. Specific feed expenditures are lower here. For example, direct labor expenditures per quintal of products at hog breeding complexes of kolkhozes and sovkhozes are approximately 2.5-fold lower than on ordinary farms, at cattle raising and fattening complexes, 2.5- (kolkhoz complexes) to 5-fold (sovkhоз complexes) lower, and at milk production complexes, 28 to 33 percent lower. The expenditure of feed (feed units) per unit of output is 26 percent lower at hog breeding sovkhoz complexes than, on the average, on sovkhozes, at cattle raising and fattening complexes, 19 percent (kolkhoz complexes) and 40 percent (sovkhоз complexes), and at dairy complexes, 11 to 10 percent.

As a result, production per quintal of products at hog breeding complexes of kolkhozes and sovkhozes is 30.5 to 28.9 percent cheaper respectively, at cattle raising and fattening complexes, 30.5 to 44.3 percent, and at milk production complexes, 7 percent.

The establishment of livestock breeding complexes required big capital investments, which, basically, justified themselves. However, these complexes by no means exhausted their capabilities. Their 1984-1985 production and economic indices differ little from 1978-1980 indices. Meanwhile, at advanced complexes technical-economic and economic efficiency is much higher. To master intensive technologies at most livestock breeding sections without large capital investments is now the chief thing. For this it is necessary to follow mainly the path of reconstructing and retooling them. A full utilization of the biological potential of animals is no less important a task, because an increase in productivity sharply lowers all the elements of expenditures, primarily feed, per unit of output.

The experience of advanced farms indicates how considerable our capabilities to increase the economic efficiency of agricultural production are. The Nazarovskiy Sovkhoz in Krasnoyarsk Kray headed by Hero of Socialist Labor A. F. Veprev has become a classic example. Here, in severe East Siberia, on 40,000 hectares of agricultural land average expenditures per unit of agricultural output are 2.3-fold lower than on USSR sovkhozes. During four five-year plans, despite the increase in wages and in prices of industrial means of production, which occurred, as everywhere, production costs basically remained unchanged. They are lower than, on the average, on sovkhozes as follows: grain and milk, 2.5-fold (milk—15 rubles per quintal), beef, fourfold, and pork, 3.5-fold, which gives an aggregate profitability of 150 to 160 percent with a net profit of 9 to 10 million rubles annually. A continuous and significant increase in

labor productivity, which is 3.1-fold higher here than the average, and the truly efficient organization of the economy and of all production processes form the basis for these striking achievements.

The sovkhoz collective headed by the director consistently took and mastered all the best at the disposal of agricultural science and advanced experience, increased the productivity of technical facilities, and decisively eliminated all excesses in the managerial apparatus and production servicing. The proportion of general production and economic expenses on the sovkhoz was lowered by more than three points. On a country-wide scale this would give savings of several billion rubles.

However, why are such examples so few? Why, knowing this experience, even neighboring model farms do not follow it? In order that a turning point may occur, there is a need for a fundamental and decisive restructuring, breaking of established orders and of the method and intensity of work, and a rational and economic organization of all production processes on the basis of scientific and technical progress. A reduction in prices of plant products is the key link from the economic aspect. Owing to the technological chain connection, this also determines the efficiency of animal husbandry. For example, a reduction of only 30 to 50 percent in feed production costs automatically leads to a reduction of 15 to 25 percent in production costs of livestock products and more.

The establishment of a single system of management of the agro-industrial complex and measures for improving the quality of products of agricultural machine building and other sectors delivering means of production to agriculture create favorable conditions for a fundamental restructuring. However, in order to carry it out in practice and to transform all kolkhozes and sovkhozes into highly intensive and efficient enterprises, it is necessary to combine as soon as possible the maximum possible expansion of the production initiative of labor collectives on the basis of cost accounting, scientifically substantiated economic systems, and advanced forms of labor organization with a decisive turn of science to all-around assistance for production.

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Kazakhstan Experiments in New Agro-Economic Arrangements

Lease Contracts Discussed

18240036c Moscow SOVETSKAYA ROSSIYA in Russian 19 Dec 87 p 2

[Interview with Vasiliy Vasilyevich Shvets, chief economist at the Tselinograd Sovkhoz imeni Manshuk Mametovoy by V. Mikhaylov, date and place not specified]

[Text] Vasiliy Vasilyevich Shvets, chief economist at the Tselinograd Sovkhoz imeni Manshuk Mametovoy. This is now the third time in his life that he has introduced the

rental contract system which he developed and on each occasion it has produced rapid and surprisingly good results. It was not his fault that a lease was not employed in the system of former economic relationships. On two occasions the instructions and circulars issued during poor years prevailed over the experiment, restrained it and halted the farm's forward movement. Life's circumstances finally caused Vasiliy Vasilyevich to move to Tselinograd and into a comfortable city apartment, where he hoped to content himself for a certain period of time with the relatively calm position of chairman of the rayplan [rayon planning commission]. He could not endure the tranquil life and once again returned to his village, where he again ended up in trouble. He was rescued by the April Plenum, the post-April restructuring aided individuals such as Shvets, reformers at heart, who now saw a vast field of activity opening up for them and thus Vasiliy Vasilyevich was once again active just as in the past. Those who heard his recent speech delivered during a practical-science conference in the CPSU Central Committee became convinced concerning his convictions. This included not only theory and suppositions but also the very facts of his life.

Shvets has been at the Sovkhoz imeni Manshuk Mametovoy approximately 3 years and the farm has already overcome its difficulties and is moving forward. Compared to 1984, gross output production increased by a factor of 2.6 last year, with more than twice as much grain being harvested and beef production increasing by more than threefold. The sovkhoz completed the year 1984 with losses amounting to 1,287,000 rubles and in 1986 it realized a profit of 1,139,000 rubles. Its profitability exceeded 50 percent and the average monthly wage increased by 44 percent and reached 254 rubles. Despite the fact that this year is a difficult one, the cropping power of the grain crops continues to increase.

This is all purely the material results of a lease. There are moral factors involved here. Before discussing them, allow me to cite one colorful detail. The Nura fishing stream flows not far from the sovkhoz's central farmstead and in the winter many tractor roads lead in that direction as the fishermen use the powerful Kirovets machines to reach their cherished locations. With the conversion over to a lease contract, the roar of powerful motors along the Nura stream suddenly abated and the snow on the fields between the village and the stream remained undisturbed. The ice fishermen must now travel a roundabout route over smooth roads. It is useless to request the use of a K-700 unit from anyone. A tractor operator cannot bear such an expense and the brigade will not allow him to do it. And the authorities, regardless of their rank, will also not allow machines to be used for this purpose.

We discussed the problems of a lease contract with Vasiliy Vasilyevich

[Question] It was in the early 1960's, a quarter of a century ago, that you first attempted to introduce a lease

contract into operations at the Arykbalykskiy Sovkhoz. What prompted you to undertake such an experiment at that time?

[Answer] It was both slipshod operations and extravagance, a time when a tractor would be issued to someone for a bottle or simply out of friendship; a pail of gasoline would be used and some mixed feed would be hauled in. I cannot endure stealing. It is said everywhere that a worker or kolkhoz member is his own boss and yet they do not feel that they are masters of the situation. It is as though planning and material incentives encourage frivolous expenditures, waste and pilfering and that formal, standard and bureaucratic cost accounting has not eliminated the expenditure mechanism that has consumed the rural economy. To the contrary, it prospered very well with it. Formerly, 10 rubles were sufficient for the production of a quintal of milk and today 35 is not enough. Prior to this we agreed that the process of growth in production costs is a regular and inevitable process. Nonsense! Production costs imply that the prices must fall or be lowered. The system of payments was such that each individual, even a conscientious worker, was forced to think only of himself.

Those who think alike tend to draw closer to one another. I recall a neighbor of mine in the early 1960's. He was roughly the same age as myself and we became good friends. On one occasion he took to boasting; he maintained that he could repair 2-3 pumps daily, that nobody else could match this figure and hence his earnings were stable. While congratulating him, I estimated that his minimum output was 50 pumps monthly and that we have approximately 100 tractors. Thus it appeared that my neighbor had enough work for only two months. I thereupon asked him directly: what will you do throughout the remaining amount of time and where will the pumps come from? It turned out that he would leave an old and worn out part in each of the pumps and thus they would very soon be returned to him once again for repair work to be carried out. What could one do in a situation such as this? One effective means — a lease contract.

[Question] What is the essence of such a contract? Quite often one hears them being referred to as a variation for payments from gross income. Is this true?

[Answer] It is not true. I am against use of the term "payment," since any system of payments assumes administration. We do not pay anything to anybody. The rates, norms and normatives have all been rejected. None of this is needed. Instead of rates we have prices. A rate is the same as that used for a day-worker. It does not create new production relationships. But a price does. The essence of a lease contract is that it establishes cost accounting relationships within a collective. All of the subunits are given complete independence. They do not deliver products, but rather we purchase them from the subunits. When commencing the restructuring, we gave no thought to the structure of our brigades — how many

people should be sent to the various areas or the size of the wage fund or the official schedule. We were not troubled by these concerns. Our true concerns included: how much we should pay a brigade or farm collective and for what services, how much should be taken from them for feed, materials and special clothing, in short, for everything that is furnished to them by the sovkhoz, the size of the lease payment for the land, amortization deductions and so forth. Everything is on a purchase and sale basis. Each subunit has a comparatively simple personal account that is maintained on a sheet of notebook paper and appears as a type of income and expenditure record. The wage fund is determined not by certain norms but rather by earnings from which all expenditures are deducted. It is even simpler than this. Each leader has a check book and thus the total amount of the overall earnings equals the difference between those checks received for work and the checks which are issued for seed, materials, certain services and so forth. Accordingly, the income of a brigade and not the additional payments or bonuses for rubles earned is distributed at the end of the year. Naturally, this is done taking into account any advances issued earlier. A monthly advance appears as guaranteed earnings for a collective.

This is easy, simple and acceptable in view of the fact that not every specialist is immediately capable of understanding all of the subtleties embodied in the instructions and recommendations pertaining to the payment systems in use at the present time. This has caused the bookkeeping department to be besieged by many complaints and disputes. We do not have such problems. A contract, personal account and a check book — this constitutes all of our circulars and norms. The central staff is simply not involved in the distribution of earnings within subunits which operate on the basis of a lease. Many of its former functions have been turned over to brigade councils and to collectives. A powerful impulse is being given to the process of democratization in production operations and in production relationships, genuine self-government is being approved and workers are becoming masters on their own land and in their own brigade. It is not necessary to carry out any special political exercises in order to convince them of this fact. They are able to see it with their own eyes.

The central staff is thus released from having to exercise operational control over production or over functions which do not fall within its competence. Only chief specialists remain in our central staff. The number of administrative personnel attached to the sovkhoz has been reduced by 30. Our sovkhoz has in a sense been divided into separate cooperatives and our task consists of creating optimum working conditions for them and organizing their interaction.

[Question] Certainly, you must know the director of the Akchi Sovkhoz in Alma-Ata, Khudenko. He has achieved stunning results with the introduction of a contract and yet there are serious differences between his and your approach for carrying out the work. Is this not true?

[Answer] This is true despite the fact that I have great respect for him and agree with him in many instances. The chief difference lies in the fact that Khudenko formed his intensive labor teams by selecting only the best personnel. Those who were lazy or who lacked the needed professional skills were removed to lower paying positions and he saw no problem in this: let them value their own position. We turn over on a lease basis fields, herds, buildings and equipment to subunits which are already in existence and we authorize them to decide upon and organize their own internal structure. We also uncovered some excess personnel. For example, earlier our herd of 3,000 head of cattle was tended by 100 individuals and now only 40 remain. A herd of 4,000 hogs is now being tended by 22 workers instead of 57. The number of personnel in the field crop husbandry tractor brigades has been reduced from 40 to 15-16 and not on the basis of an order issued by us or interference by the Board of Directors. It happened of and by itself. In the process, a large number of good and conscientious workers were released from their assignments. However, they soon found work elsewhere. A construction brigade was formed and it presently consists of 50 individuals. Personnel were added to the carpentry department and to the saw frame operations, the domestic services combine and dining hall were expanded, a baked goods trade was started and the municipal services operation is being increased in size.

[Question] But what would the situation be with regard to the lazy and unconscientious workers if, in accordance with your system, the collective was forced to leave them alone? Or what about those who were pilfering goods?

[Answer] Initially, we asked the same question and we even called for fines to be imposed — a payment of 3-5 times the amount for pouring a pail of gasoline into a personal vehicle. Here we were being influence by the old approach for solving such problems. In principle, this was in conflict with a lease contract: we had already granted the brigade authority and now it must bear full responsibility for its own property. We had acted in an excessively cautious manner and, as it turned out, there was no need for the extra amount of caution. Why did everything change in just one hour? Everybody serves as a controller or inspector. A thief robs not from the sovkhoz but rather from his comrades. The same applies to the slackers and loafers, as their earnings decline sharply.

[Question] Vasily Vasilyevich, did you not say that you were even excluded from the party?

[Answer] I would have sat in prison if it had not been for the April Plenum. Moreover, it was necessary to be rehabilitated and to enter the party a second time. There was a great amount of resistance to the lease contract. How could it be otherwise? At the present time, try to give away a lambskin in connection with the arrival of an important guest. The animal breeders will not permit this to be done — how can they afford to give away their

wealth? They did not immediately see these consequences of a lease and thus they supported me at first. Later, after everything had been explained, their attitude towards me was different. Although I neither denounced anybody or exercised undue control. This is not needed in the case of a lease contract. The sovkhoz workers and kolkhoz members become masters of their own property and, just as in the past, they begin to evaluate command generosity as common thievery.

There are many who are frightened by still another factor. You have just made arrangements for everything; you have issued instructions and the tractors and personnel have been transferred as deemed necessary and suddenly everything is being done for you. It is as though you are no longer needed. It appears that only the council hears you and that nomenclature regalia is of little importance. Authority, skill and intellect are needed. My present director, Nikolay Leontyevich Baklan, initially supported me and yet later, when he saw how everything was collapsing, he wrote a letter to the rayon committee: accept Shvets back into the rayon, since his actions are sufficient for you. I requested the rayon committee personnel: "Let me have a month or two." They agreed and everything there fell into line and Baklan himself is now an active advocate and propagandist for the lease contract.

[Question] It would appear that your restructuring began at that moment when the lease contract was concluded and that everything depends upon its initial conditions; a mistake merely has to happen and the whole system may collapse. Could you no reveal some of the secrets of the sovkhoz price committee?

[Answer] We equate the accounting-contractual prices used by the sovkhoz for acquiring products from its subunits to the planned production costs, with the lease payment being deducted from it. The plan-accounting prices used by a brigade for acquiring needed items are determined by the production cost for the seed or by the true cost for the materials, while taking into account the expenses for their delivery and storage. These and other prices are established for a period of 5 years.

[Question] All of this applies to brigades and farms which sell definite products. But what is the situation with regard to service subunits?

[Answer] Here we encounter special complications and peculiarities. For example, we do not pay repair workers for repair work carried out. If they wish to carry out such work, fine. If they do not, it is their decision. We have only one concern — to ensure that all machines are in good working order. The workshop receives fully the wage fund allocated for it only if there was not machine idle time. If a tractor or any machine lies idle, the cost of such time is deducted. This money is made available to those who were victimized. Our repair workers no longer

sit in the workshop, but rather they go out onto the fields where they instruct the machine operators and ensure that technical maintenance is carried out in the correct manner.

At the present time, lease contracts have been introduced into operations on 45 farms in Tselinograd Oblast alone and this has aided the Tselinograd farmers in preparing for the 70th anniversary of October, in carrying out their principal plan indicators for two years of the five-year plan and in raising the profitability to 26 percent. The experiment by a humble sovkhoz economist has been approved by USSR Gosagroprom. At the present time, advocates of this system can be found in all corners of the country. Certainly however, the majority of them are in Kazakhstan. Included among other farms which have converted over to the lease contract is the Zlatogorskii Sovkhoz in Arykalykskii Rayon in Kokchetav Oblast, where the chief economist is Aleksandr Vasilievich Shvets, the son of Vasilii Vasilievich. I asked: "Is your son doing a good job?" Shvets could not conceal his pride:

"I should think so! All of the other sovkhozes in the area are operating at a loss while his is operating on a profitable basis."

Initial Results of Experiment Discussed
 18240036a Alma-Ata SELSKOYE KHOZYAYSTVO
 KAZAKHSTANA in Russian No 6, Jun 87 p 10

[Article by B. Brezhepov, Kustanay Oblast: "From Gross Income"]

[Text] In the spring of last year, the command appeared unexpectedly at the Sevastopol'skii Sovkhoz. Specialists attached to the republic's Gosagroprom, the oblast's agro-industrial committee and to the RAPO [rayon agro-industrial committee] "occupied" the sovkhoz's Planning Department. They scrupulously computed the operational results of the tractor and field crop husbandry brigade headed by I. Babich and they argued. One of the two years set aside for the experiment in wages based upon gross income had elapsed and naturally everybody was interested in whether or not the new form had proven its worth. The results were impressive: the brigade had saved more than 20,000 rubles in direct expenditures and had achieved record harvest results.

What does the brigade commanded by Babich consist of? It numbers 16 machine operators, three trouble-shooters, an assistant brigade leader for accounting and an agronomist. It is responsible for 6,900 hectares of land. The brigade has employed a collective contract since 1979 and it employs temporary advances in wages while taking into account the KTU.

Here there is one goal — to achieve efficient farm management through restructuring of the wage mechanism. The workers understand the manner in which earnings are distributed. Payments are made not on the

basis of rates or output, as was earlier the case, but rather in accordance with net income — the value of the gross output minus the production expenditures. Thus, the greater the gross income and the fewer the expenditures, the higher will be the wages. Savings were also encouraged earlier — machine operators were paid up to 25 percent of the total amount of funds saved, based upon the annual results. But these bonuses were issued separately and considerably later than the annual payment and this lowered their effect from a psychological standpoint. Today the payment for savings is made simultaneously with the earnings, that is, two very important factors are not separated one from the other: the work is performed both in a fine and thrifty manner.

During the first year of the experiment, the brigade produced 1,060,000 rubles worth of products. Its material expenditures amounted to 326,000 rubles. Of the remaining 734,000 rubles, 75,500 were set aside for wages. Advances were paid to the machine operators in the amount of 45,800 rubles and the remainder — 29,700 rubles — was used for the annual additional payment.

The amount of the monthly advance for a 1st class tractor operator was established in the amount of 190 rubles. This figure may seem high and yet at the Sevastopol'skii Sovkhoz they took into account the psychological aspect and reasoned as follows: a high guaranteed monthly wage creates an appropriate attitude for more productive work. The KTU helps to avoid a levelling off in the wages. The brigade leader has a table which defines those factors which raise (labor productivity) or lower (low output, non-fulfillment of the brigade leader's requirements, poor work quality, violations of labor discipline and unsatisfactory condition of equipment) the wages. The brigade has had incidents of waste and rejects.

The second year of the experiment finally convinced those who entertained doubts concerning the new wage form. The brigade headed by I. Babich had already saved more than 60,000 rubles in direct expenditures. True, owing to objective reasons the cropping power turned out to be lower than that planned. But the system nevertheless still worked. And not only in the case of the brigade commanded by I. Babich. Two other brigades of the Sevastopol'skii Sovkhoz requested to be converted over to the new wage form. What were the results? The brigade of state prize laureate of the Kazakh SSR, Sh. Chigibayev, realized a savings of 43,300 rubles and in the process obtained a yield of 20.5 quintals per hectare. The brigade commanded by V. Maslikov realized a savings of 25,000 rubles in direct expenditures and exceeded its planned yields. On the other hand, the only field crop husbandry brigade (commanded by I. Popov) which did not employ the new wage form sustained an overexpenditure of 111,600 rubles.

How did the brigades achieve these economies? Here is what Sh. Chigibayev had to say:

"They adopted a more strict attitude with regard to equipment idle time, they are conserving in the use of spare parts and they are restoring old items of equipment. For example, last year Mikhail Khromtsov did not request one excess item of spare parts for his combine.

Certainly, the brigades are controlling each item of expenditure in a more scrupulous manner. Actually expenditures are compared against the planned expenditures during each meeting of a brigade council. The brigade headed by Babich erected a blacksmith shop in the vicinity of a stationary field camp. Simple repairs are carried out here, with no time being lost for making trips to an MTM [machine and tractor shop]. At the "Kirovets" base, trouble shooters Aleksandr Vashchenok, Sergey Yelenin and Nikolay Nevserya developed a loading unit. Today there is no longer any need for bringing special equipment into the brigade.

Rumors concerning Babich's brigade circulated far beyond the sovkhoz's borders and the machine operators demanded that their farm leaders convert over to the new wage form. Last year, 40 brigades made this change.

The introduction into the oblast of wages based upon gross income has completed the final stage. Today the time is at hand for its dissemination on a mass scale. Similar to any new development, wages based upon gross income raise the need for decisions for other important problems. For example, how is it possible to avoid having the brigades distracted by various types of intra-farm work? The specialists believe that economic detachments must be formed. It will then no longer be necessary to remove personnel or equipment from the brigade. And the creation of such a detachment would be a step taken towards a departmental administrative structure. At the present time, just as in the past, a chief agronomist can transfer personnel and equipment from one brigade to another without taking into account the opinions of the brigade councils. Somebody must be responsible for the status of affairs in field crop husbandry. For example, the chief of a department. A chief agronomist is still only a technologist and is responsible only for observing a technology. For him, the independence of a brigade is only one of many concerns. Experience is available in the oblast in connection with the creation of a departmental administrative structure. For example, at the Michurinskoy Sovkhoz. Unfortunately however, this experience is not being disseminated. Certainly, only 40 brigades in the oblast operating on the basis of the new wage form is still a low figure. As yet, not one collective in animal husbandry has been converted over to the new wage form. Meanwhile, the tremendous reserve embodied in wages based upon gross income is deserving of greater attention.

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New Method In Use

18240036a Alma-Ata AGROPROMYSHLENNYY KOMPLEKS KAZAKHSTANA in Russian No 11, Jun 87 p 26

[Article: "From Gross Income"]

[Text] The article by B. Yerezhepov (Issue No 6 of AGROPROMYSHLENNYY KOMPLEKS KAZAKHSTANA for 1987) was published under the title "From Gross Income."

As reported by the secretary of the Kustanay Oblast Party Committee V. Dvurechenskiy, it has been examined by the oblast agro-industrial committee. The experiment started at the Sevastopol'skoy Sovkhoz in Uralskiy Rayon, in the brigade headed by I.I. Babich, has received wide dissemination. This method is presently being employed by 391 field crop husbandry brigades. In animal husbandry, the number of such collectives is 186. However, 190 family teams are organized here. The leading methods for labor organization and wages are being publicized extensively. Economic training has been provided this year at an agricultural institute, at the Tselinselkhozmechanizatsiya NPO [scientific production association] and at the Kustanay Scientific Research Institute of Agriculture for the leaders and chief specialists of sovkhozes and kolkhozes, the rayon agro-industrial association and the oblagoprom [oblast agro-industrial committee]. Exercises were also conducted for all middle echelon specialists, bookkeepers and for the brigade leaders of contractual collectives.

A great amount of attention is being given to converting farms over to a departmental administrative structure. Commencing this year, Taranovskiy Rayon will employ the departmental structure and a number of sovkhozes in other regions of the oblast are employing this form of production organization. Its dissemination is being held up by the absence of cadres of personnel in the various branches. However, the implementation of the social program and the retention of personnel in the rural areas are making it possible to solve this problem.

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TILLING, CROPPING TECHNOLOGY

Ways of Decreasing Material Input in Grain Production

18240043 Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 12, Dec 87, pp 51-57

[Article by A. Brylev, candidate of economic sciences and sector director and N. Panibratets, candidate of economic sciences and senior scientific worker (VNII-PIN [Expansion unknown]) of USSR Gosagroprom [State Agroindustrial Committee]; "Ways to Decrease the Materials Intensity of Grain Production"]

[Text] The Basic Directions of Economic and Social Development of the USSR in 1986-1990 and in the Period to the Year 2000 foresee a forestalling pace of

grain production. With this goal in mind, the zones of guaranteed grain cultivation are expanding, the structure of grain sowing area and the variety composition are improving, the material-technical base of the branch is being strengthened and a complex of organizational-economic measures is being implemented. In particular, according to the resolution of the CPSU Central Committee and the USSR Council of Ministers, "On Further Improving the Economic Mechanism of Management Within the Agro-Industrial Complex of the Country," in 1986 supplements were established for grain sold to the state above the average annual level of the previous five year plan, as were supplements to procurement prices for durum wheats, buckwheat, peas, millet, beans and several other crops. The counter-sale of automobiles, tractors, some types of agricultural machinery and of other resources which are in great demand is being organized for enterprises that have overfulfilled the grain sales plan. At the same time, the aforementioned measures have been called upon to eliminate the negative tendencies in the use of the resources of the grain industry and to increase their return.

One out of nine workers in kolkhozes and sovkhozes is occupied in grain production; over half of arable land, one-fifth of fixed production capital and one-seventh of material resources are utilized for grain production. It is clear that the effectiveness of available potential in agriculture depends to a large extent on the effectiveness of grain production. This is attested to, for example, by the almost simultaneous changes in the dynamics of indexes of labor-, capital- and materials-intensity of gross agricultural production and grain. This kind of juxtaposition is the result of the influence of common factors on the level of the aforementioned indexes. At the same time, special biological, technological and economic features of grain production give rise to specific problems in the use of material resources.

Many material resources are utilized in grain production. They differ in origin, source of entry, nature, duration and degree of influence on production effectiveness. Here certain levels, tendencies and proportions in the use of resources corresponds to every stage of development of production forces (see table).

Dynamics of the Materials-Intensity of Grain Production in the Country's Kolkhozes and Sovkhozes (in Comparable Prices for 1973), rubles per 1 ton

Material expenditures	1971-1975	1976-1980	1981-1985
Seed	10.12	9.53	8.94
Mineral fertilizers	4.18	5.19	6.11
Organic fertilizers	1.75	1.96	2.57
Means of plant protection	0.63	0.84	1.25
Diesel fuel	2.64	2.55	2.86
Benzine	1.71	1.62	1.53
Spare parts	1.86	1.97	2.08
Expenditures of other labor tools	7.17	7.88	13.30

Dynamics of the Materials-Intensity of Grain Production in the Country's Kolkhozes and Sovkhozes (in Comparable Prices for 1973), rubles per 1 ton

Total material expenditures (without amortization)	30.06	31.54	38.84
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Calculations have shown that during the last three five-year plans a stable tendency towards increasing the materials-intensity of grain has developed in the main grain-producing regions and in the country as a whole. The average annual growth pace of material expenditures per ton of grain comprises 1.8 percent in USSR kolkhozes and sovkhozes. Here the pace of change in standard expenditures of mineral fertilizers, plant protection agents and electrical energy were higher than branch materials-intensiveness by a factor of 3-5. The share of consumption of fuel and lubricating materials has remained stable whereas that of seed dropped in the course of the entire period.

An evaluation of the existing dynamics of the materials-intensity of grain cannot be unequivocal. It is economically justified to the degree that its growth is the result of objective reasons and is accompanied by a savings in manpower, an improvement in labor conditions and a decrease in the materials-intensity of the end product.¹ In the remaining cases growth in the materials-intensity of grain is economically unsound since it is based on disproportions in material-technical supply, on extensive methods of management, and on errors in the organization and stimulation of the use of material resources. The elaboration of measures to eliminate such shortcomings is an essential prerequisite for implementing resource-sparing policies.

As this applies to grain production it signifies the overall development and improvement in the organization of seed farming, growth in the volume of deliveries and optimization of the structure of utilizing chemical agents, the accelerated introduction of intensive and waste-free technologies, the improvement of quality and structure of grain production and a curtailment of production and capital losses.

The aforementioned measures have numerous aspects and are not identical in importance, possibilities and implementation schedules. Those directions for economizing on material expenditures which facilitate the achievement of maximal grain crop productivity with the assigned volume of capital are considered to be a priority. In examining, in connection with this, the process of intensification in grain production we should note that under contemporary conditions growth in the harvest results almost completely from chemical agents.

more productive varieties and good-quality seed. Let us also keep in mind that over 50 percent of material expenditures (without amortization) in the grain industry consist of expenditures for seed, fertilizer and plant protection agents. Consequently, the availability of such tools of labor and the effectiveness of their utilization determine, to a considerable degree, the possibilities for expanded reproduction and for economizing on resources within this branch.

Calculations attest to the fact that the expenditure of seed in natural form per 1 ton of grain remained stable in USSR sovkhozes and kolkhozes in the course of 1966-1985, whereas per hectare of sowing area it had a tendency to increase. We could confirm with great probability that an increase in the expenditure of seed per hectare of sowing area did not arise from technological necessity — there was an absence of changes in the structure of types and the distribution of crops, the resown areas were relatively constant, the agricultural foundation for cultivating agricultural crops improved, varieties of the intensive type were introduced and so on. This conclusion is confirmed by the experience of many enterprises which achieve higher yields with smaller per unit expenditures of seed, all other conditions being equal, as well as by the excessive differentiation throughout enterprises of individual oblasts. For example, in the Kolkhozes of Orel Oblast the scope of variation in the mass of seed sown per hectare of grain crops has been in the area of 50 to 80 kilograms during recent years.

With the existing productivity, the stable large outlay of seed has resulted in increasing the proportion of seed in gross grain yield by 1.9 points during the Ninth Five-Year Plan as compared to its proportion during the eighth. The negative effect of this factor on the materials-intensity of grain was strengthened by the increase in cost of seed. Whereas during the Eighth Five-Year Plan 1 ton of seed grain cost agricultural enterprises 75 rubles, during the 11th it cost 128 rubles.

The growing batches of seed sown is the result first and foremost of the inadequacies in the material-technical base and organization of seed farming and of the low quality of sowing materials. Thus, in sowing class II seed an additional 5-7 kilograms of grain is needed per hectare and for the entire sowing area, such as the RSFSR, let us say, — about 420,000 tons. Actually the overexpenditure of seed could have been significantly higher since every fifth hectare of grain fields in Russia has been sown in non-regionalized varieties in recent years, and every third hectare — in class III or unconditioned seed.

The practical experience of enterprises and foreign data attest to the fact that the sowing rate of seed can be curtailed by a factor of 1.5-2 as compared to the present rate without a loss to the productive strength of the land, thereby economizing on millions of tons of grain. However, economizing on seed is not a goal in itself. It is a benefit if it is accompanied by growth in productivity

and if it is achieved by means of improving the quality of seed and the general quality of farming, by the correct selection of regionalized varieties of the intensive type by the formation of the optimal stem stand with a consideration of reserves of nutritive substances and moisture and by the timely implementation of a complex of agrotechnical measures.

In order to deal with the task of improving the productivity of grains and of decreasing per unit expenditures of seed it is essential to create a network of specialized seed-farming enterprises everywhere. Such enterprises should function within the system of every RAO [Rayon Agro-Industrial Association] according to a special regimen. They are freed of delivering grain to the state, have advantages in financing and in the construction of seed-farming complexes, are provided for with limited material-technical special-purpose resources, have at their disposal all special privileges of trade enterprises as foreseen by the resolution of the CPSU Central Committee and USSR Council of Ministers, "On Further Improving the Economic Mechanism of Management Within the Country's Agro-Industrial Complex," receive equal opportunities in the development of a seed base with a consideration of average rayon supplies of forage, and have the right to regulate prices for seed depending on quality as well as to regulate the norm for profitability of grain production established for cooperating partners. It is only with the comprehensive restructuring of seed farming that a maximal concentration of material resources and scientific forces, effective ties between primary seed farming and its subsequent links, a purposeful and controlled variety policy, complete satisfaction of the need for seed in the required quality, the development of transitional and insurance seed funds and a considerable decrease in per unit expenditures of such seed are possible.

Standardizing the sowing rate of seed occupies an important place in the expenditure-control mechanism of management. On the one hand sowing norms for seed are called upon to reflect the objective parameters of the development of breeding, seed farming and agrotechnology of grain crops in the country's zones at every given period, and in this role they are bearers of publicly-necessary expenditures; on the other, norms for seed expenditures which are averaged for similar groups of enterprises must take the specifics of each enterprise into account. If public and cost accounting interests are coordinated in harmony within these norms then we can count on their effectiveness.

In evaluating from this point of view existing norms for sowing seed we should note that they suffer from a one-sided orientation, are recommendations in nature, and are extremely approximate, conservative and practically uncontrollable. Thus we have a poor manifestation of responsibility by enterprises for adhering to norms, great fluctuations in batches of seed sown under the same types of natural conditions, and the predisposition of many enterprises to partially cover the deficit in

seed by means of elevating the need for seed and by receiving seed loans without justification. While maintaining the independence of enterprises in the development and use of seed funds, oblast agro-industrial committees together with experimental stations must provide dependable normative documentation and mobilize intensive methods of seed farming and cultivating seed crops for introduction. At the same time it is necessary to eliminate shortcomings in accounting for seed. At the present time seed expenditures in natural form are reflected in annual reports of enterprises (form Number 17-skh) for the calendar year as a whole for grains and leguminous crops, including corn, without delineating crops according to the way in which they are used by the enterprise (for grain, for hay, for green feed, etc.). Information in this form does not allow us to compare seed expenditures with production output, normative with actual indicators or their levels in various enterprises and regions. More detailed data on actual seed expenditures exist in state seed inspectorates, but it does not do away with the aforementioned questions since this data is not coordinated with sowing areas and gross yields.

In order to strengthen the possibilities of analysis and control over the utilization of seed it is essential to have interrelated data on sowing area, on the use of seed and the amount of production, all of which is concentrated in statistical organs. In order to do this we must include data on seed expenditures in the reports on sowing results for the harvest of the corresponding year (form Number 4-skh). The expansion of the aforementioned form will not require additional expenditures because natural indexes for seed are utilized in calculating the cost price of production in kolkhozes and sovkhozes and are proposed for generalization to state seed inspectorates.

If the per-unit expenditure of seed per unit of production has stabilized and there is complete assurance that it will decrease already during the current five-year plan the dynamics of utilizing the products of the chemical industry will be different. In the near future it is more likely that there will be a continued increase in the level of consumption of chemical agents per ton of grain. Nevertheless, despite the objective nature of this process we should not forget about the existing problems of chemization. Let us look at some facts and calculations.

It has been established that physical and chemical losses of fertilizer during shipment from the plant to the field exceed 10 percent. Since fertilizers are written off according to commodity-transport invoices of plants-suppliers and associations of Selkhozhimiya [Agricultural Chemical Association], their actual expenditure for grains is elevated by about 0.8 million tons annually. We also know that the maximal effect from the use of fertilizers is achieved with balanced feeding of plants. According to data by VIUA [All-Union Scientific Research Institute of Fertilizers and Soil Science], the optimal ratio of nitrogen, phosphorus and potassium for grain crops is recognized to be 1:1.4:0.8, whereas actually

during the 11th Five-Year Plan in the mineral fertilizers used these active substances were in a ratio of 1:0.8:0.5. With a shortage of phosphorus the effectiveness of utilizing nitrogen fertilizers decreases by one-third, which is equivalent to the expenditure of 0.5 million tons of active substance without results.

The return on fertilizer decreases by half when the soil is acidic. Taking into account the areas of acidic soil, the probability that grain crops will be sown there and the average percentage of fertilized crops it has been calculated that decreased return from mineral fertilizers under such conditions is equivalent to direct losses of 1 million tons.

The effectiveness of mineral fertilizers depends to a large degree on their timely and efficient use. Thus, the local method of applying fertilizers as compared to scattering the fertilizer enables us, according to VIUA data, to decrease expenditures by a factor of 2-2.4 per ton of grain. Since dependable means of mechanization for local application of fertility granules are practically absent, in essence a good half of their nutritive substance is lost.

It has been researched that even with poor distribution weeds pull out up to 60 kilograms of nutritive substance from the soil. With a consideration of this fact and with the availability of herbicides for grain crops weeds use up about 1 million tons of mineral fertilizers.

Impressive is the amount of fertilizer used by weeds or accumulated in that part of the harvest that has perished from disease and cereal grass pests or that was lost during harvesting, shipment or storage or in the use of non-prepared grain for forage purposes. According to the most careful evaluations, 1.8 million tons of substances assimilated from fertilizers are lost together with the biomass and the harvest of grain crops.

In determining total losses of mineral fertilizers a correction in their quantity was made after a consideration of the reciprocal correlation of soil acidity, the phytosanitary condition of the fields and the structure and methods of applying mineral fertilizers. According to tentative calculations, general losses of nutritive substances during the 11th Five-Year Plan comprised an average of 6.3 million tons costing 1.5 billion rubles (according to the wholesale prices of enterprises). Only every fifth ton of mineral fertilizer earmarked for application on grain fields was utilized to obtain the product.

Of course the low return on fertilizers is a problem that exists not only for the grain field. But it is especially urgent precisely within this branch. Eighty million hectares of grain crops are fertilized. Here about 40 percent of the entire mass of mineral fertilizers is utilized, and in coming years it is planned to have the predominant

portion of growth result from their deliveries. In order to avoid absolute growth in losses of mineral fertilizers we must implement a complex of investment and organizational-economic measures.

It has been shown that directing resources into curtailing losses is several times more effective than expenditures for the production of an equal quantity of materials. For this reason, the investments into increasing fertilizer production must be fully coordinated with material-technical supply in order to create optimal conditions for use. This kind of coordination can be achieved if in the near future soil is limed, organic fertilizer is applied, an integrated system of plant protection is utilized and a base for the storage and application of mineral fertilizers is formed on a priority basis and at a forestalling pace.

Questions dealing with the overall development of chemicalization are not new but they are becoming very urgent. If we take the use of chemicals for agriculture in 1970 as our base, then in 15 years this use has increased by a factor of 2.2 for mineral fertilizers, by a factor of 2 for organic fertilizers, by a factor of 2.1 for chemical means of plant protection and by a factor of 1.4 for liming materials. There has been practically no change in the relationship between various elements of nutritive substances within mineral fertilizers. In the light of the aforementioned losses of mineral fertilizers the given figures attest to serious disproportions in the means for increasing soil fertility. Especially noticeable are the lags in the use of liming agents for the soil. The volume of deliveries of liming materials did not exceed 50 million tons during the 11th Five-Year Plan, which is less than the needed quantity by a factor of 2.5. If we consider that half of the lime supplied to agriculture is expended for neutralization of the physiologically-acidic mineral fertilizers applied annually, then with the current pace and doseages, the liming of soils will require 15-20 years.

Growing difficulties with liming sometimes result not from objective reasons. In our opinion they are the result of an economic mechanism of management of this process that is not regulated. Above all the budget system for financing liming operations gives rise to dependent attitudes, decreases the responsibility of kolkhozes and sovkhozes in utilizing lands for their stated purposes and does not stimulate the production and utilization of liming materials on the basis of local reserves of raw materials and industrial wastes. In turn enterprises of the agrochemical service do not have the incentive to develop the base for the procurement and storage of liming materials and to expand the volume of unprofitable services. For example, simply to deliver fertilizers enterprises are charged 14.3 rubles per ton of freight, whereas the enterprises of the agrochemical service receive no more than 10 rubles (including the cost of the raw materials) for shipping and applying 1 ton of liming powder. In this case cost accounting interests are in clear contradiction to national economic interests since the return on lime is greater than the return on fertilizer. Finally, for the enterprises of the USSR Ministry of

Industrial Building Materials field reclamation materials are not types of products that fit its profile and do not exceed 2 percent of total production volume. The non-fulfillment of the plan for the delivery of liming materials can always be compensated for by the additional production of cement, bricks and so on without decreasing the level of capital-creating indexes. Here cost accounting interests are not coordinated with general national interests.

Thus, the economic interests of production and the use of liming materials must be brought to correspond fully to that role which they are called upon to play in expanded reproduction of the fertile strength of the land and in fulfilling the USSR Food Program. Evidently, it would be expedient to subordinate all enterprises specializing in the production of reclamation agents to the USSR Ministry for the Production of Mineral Fertilizers, which will enable us to carry out the coordinated and effective policy of farming chemicalization. At the same time it is necessary to replace the budget principle of reimbursement for expenditures for liming and adding phosphorus to soil by the cost-accounting method and to direct freed capital into the building of enterprises and shops for liming materials and platforms and hangars for their storage. We should also reexamine rates for various types of work carried out by enterprises of the agrochemical service.

The intensification of grain production is usually accompanied by additional expenditures of energy resources. Thus, the expenditure of electrical energy on irrigated lands is several times higher than on dry-farming lands; expenditures of fuel per hectare of grains cultivated according to intensive technologies are 25-30 percent higher than those in cases in which crops are cultivated according to regular technologies. Under such conditions energy-sparing technology and techniques and organizational-economic factors of economizing on energy sources acquire special significance.

Calculations testify to the fact that about three-fourths of the energy used in the grain industry consists of the more costly motor fuel. This means that a sparing attitude toward diesel fuel and gasoline to a large extent determines the level of energy-intensiveness of grain and the possibilities for fulfilling the tasks of the USSR Food Program to economize on fuel and lubricating materials by at least 5 percent.

The country's agricultural enterprises annually expend almost 10 million tons of liquid fuel for the production of grain, including 1.9 million tons for plowing, 3.6 million tons for other field work and 4.4 million tons for transport operations. With some standardization of accounts the aforementioned figures can serve as a dependable orientation point in the search for basic directions and sources for economizing on petroleum products.

As the energy supply to agriculture increased there was a growth in the intensiveness of soil cultivation, including in the cultivation of grain crops as well. An indirect proof of this is the growth in the density of tractor operations per hectare of sowing area from 5.1 standard electrical tractor hectares during the Ninth Five-Year Plan to 7.9 standard electrical tractor hectares during the 11th. This kind of dynamics has intensified ecological problems of land use, has hindered growth in the productivity of grain fields and has resulted in unjustified production losses. According to the conclusions of scientific institutions, confirmed by the practices of leading enterprises, in order to achieve the required productivity of grains fewer resources by a factor of 1.5-2 are required for soil cultivation than are expended at the present time.

The introduction of soil-conservation technology on the fields of Kazakhstan and Belorussia, the Ukraine and the RSFSR Non-Chernozem Zone has encouraged growth in field productivity by 3-5 quintals per hectare with fewer expenditures of material resources (by 10-15 percent) and first and foremost of fuel (by 20-30 percent). For this reason the indicated twofold increase in the scale of use of soil-conservation farming systems will enable us to save hundreds of thousands of tons of diesel fuel. However, the achievement of the aforementioned savings depends to a large extent on the availability to kolkhozes and sovkhozes of an adequate number of sweeps, stubble sowers, combined units and so forth. In a similar dependence on branches of agricultural machine building we have the implementation of the possibilities to economize on fuel and lubricating materials in harvesting and shipment operations. Thus, in harvesting one-third of grain fields combines of the Don type required 40,000-45,000 tons less fuel; the utilization of tractor trailer rigs for shipping grain from combines yielded a savings of at least 40 percent of the fuel expended for this purpose, and so forth.

The strengthening and improvement of the material-technical base of agriculture is the basic direction for decreasing energy intensiveness of grain production. Nevertheless, the effect of technical achievements can manifest itself fully only with the constant improvement of organizational-economic measures for stimulating fuel economy on the part of consumers. Above all it is essential to accept ready products instead of work volume in standard reference hectares as the basis for planning the demand for fuel. With this kind of system for developing fuel funds there will be a radical change in the attitude towards energy-conservation technology, there will appear the opportunity to evaluate the real contribution of each enterprise toward achievements in economizing on fuel products; conflicts in the dynamics of fuel expenditures per unit of work and production will disappear and there will be no possibility for misappropriations in the course of account-keeping.

For example, according to our calculations, with a growth in the volume of freight shipments per hectare of grains in 1970-1985 by 21.3 percent, the volume of

transportation operations of tractors and motor vehicles (in tons per kilometer) increased by a factor of 1.8 during this time. As a result the stable decrease in the amount of fuel per unit of work fulfilled was accompanied by growth in its consumption per physical hectare of sowing area and ton of grain. Considering the increased scale of services of outside organizations in the areas of freight shipments, the relatively stable level of mechanization of transportation operations in grain production, and the discrepancies in the nature and pace of changes the aforementioned indexes cannot be explained by anything other than the unjustified attempt by enterprises to achieve high intermediate results, to acquire additional capital and achieve a false savings in fuel.

Practical experience attests to the fact that potential opportunities for economizing on all types of material resources are implemented best under conditions of the introduction of intensive technologies and subordinate forms of labor organization. It answers the question of at what cost is the higher return on expenditures achieved — first of all, thanks to the concentration and optimization of resources being distributed with a consideration of all factors of development of plants on each field within a given segment of time; secondly, as a result of the special interest of cost accounting formations in achieving maximal *etü* results while determining resource volume.

Our calculations, computed according to the data from bookkeeping accounts of the Lipetsk Agricultural Experimental Station, of Zavetly Ilichia Kolkhoz of Lipetsk Oblast, of Kulikovskiy Sovkhoz, of Put k Rassvetu Kolkhoz and Mir Kolkhoz of Orel Oblast and of others, have shown that real expenditures per hectare of intensive grain crops are 25-40 percent higher than per hectare of regular crops. Such differences have developed primarily by means of the fluctuations in the level of application of fertilizer, pesticides and other chemicals. At the same time enterprises save no fewer than 30 kilograms of seed per hectare of intensive crops thanks to better tillering conditions and a good technological track.

In general in the enterprises that were examined the additional expenditure of material resources per hectare of intensive crops is accompanied by an increase in the productivity of grains and a decrease in the materials intensity of products by 30-50 percent. At the same time it has been established that a decrease in materials intensity and in the cost of grain is achieved with an increase in field productivity by a factor of 1.5-2. In enterprises which have achieved a relatively high level of productivity of grains with traditional cultivation methods the transition to intensive technologies is accompanied by a decrease in return on expenditures. From here there arises the necessity to strengthen the interest of cost accounting collectives in expanding intensive technologies, in organizing special accounts of expenditures for intensive crops and in making changes in the system for calculating the cost price of grain.

It is important in practical terms and correct in theoretical terms to include expenditures of organic and mineral fertilizers on grain fields, just as is done for other crops, in production of several years duration with a consideration of results.² Undistributed expenditures will supplement incomplete production. We must act in a similar manner as regards expenditures on fallow fields. Changes in the calculation of grain costs enables us to improve the mechanism for providing incentives and for price formation and to increase the dependability of conclusions concerning the effectiveness of grain production following various predecessors, according to different technologies, and in various enterprises, brigades and links.

Intensive technologies in coordination with progressive forms of organization and reimbursement of labor enable many enterprises to achieve a radical change in the economy of grain production. In Orel Oblast, for example, Mir Kolkhoz of Glazunovsky Rayon in 1983 introduced a branch system of management, collective contracts and a check form of interrelated accounts, transferred all production subdivisions to cost accounting, and utilized intensive technologies on one-third of grain fields. As a result in all branches of agriculture, especially in grain production, there have been significant changes. With a small amount of growth of investments per hectare of crops the productivity of grains increased from 22 quintals per hectare in 1981-1982 to 29.4 quintals per hectare in 1983-1985 and to 36.8 quintals per hectare in 1986. Members of the independent link saved 4-5 percent of the allocated sum total of material expenditures each year, especially succeeding in economizing on seed (7-9 percent), fuel (16-18 percent) and spare parts (13-14 percent). In general materials intensity of grain production decreased by 22.3 percent after the introduction of organizational-economic innovations.

Thus, by just concentrating on priority directions in the development of seed farming and chemicalization, on the introduction of intensive technologies and progressive forms of labor organization and on the stimulation of labor we can raise gross grain yield and the effectiveness of utilizing material resources.

Footnotes

1. For example, the expansion of area in leguminous crops under otherwise equal conditions results in the growth of materials-intensity of grain, but the balance of rations in protein enables us to curtail the expenditure of feed per unit of livestock production, the production of strong and durum wheats is accompanied by supplementary material expenditures which are compensated for by an increase in the quality of products and a decrease in the expenditure of raw materials in the food industry.

2. The necessity of solving this problem is strengthened with each passing year in connection with the fact that first of all, there is constant growth in the use of fertilizers and their doses in the cost price of production, secondly, we are seeing a significant fluctuation by crop in the degree of fertilized area and assimilation of nutritive substances; thirdly, for "repair" work on the enormous fallow field large one-time and ongoing expenditures are required, the effectiveness of which is manifested in the course of many years.

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FOOD PROCESSING, DISTRIBUTION

Public Catering Official on Sector Improvements

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[Article under the rubric "Interviews on Urgent Topics" "Public Catering Today and Tomorrow"]

[Text] **The Comprehensive Program for the Development of Consumer Goods Production and the Service Sphere in 1986-2000** has set the task of securing the total satisfaction of the population's need for a varied and rational diet. As regards public catering, the 12th Five-Year Plan calls for completing the conversion of workers', students', and school dining rooms to the production of meals that reflect the character and conditions of work or studies. Cities and rural population centers must also substantially expand the network of public catering enterprises for a broad clientele during working and nonworking time (dining rooms, cafes, bars, restaurants, etc.) and improve the quality of their service.

We asked Zoya Timofeyevna Soboleva, chief, Public Catering Administration, USSR Ministry of Trade, to describe the sector's today and tomorrow.

[Question] What has already been done to fulfill the comprehensive program and targets of the five-year plan? Can it be said that the state of affairs has changed appreciably for the better in the last 2-3 years?

[Answer] In order to evaluate the existing level of the sector's development, I shall cite several figures. Approximately 80 percent of the dining rooms at places of work and study have been converted to a system of breakfasts and lunches that are based on the corresponding rations [rations]. The number of dining rooms in which tables are laid beforehand in order to accelerate service has been increased. In general education schools and SPTU's [agricultural vocational-technical training schools] this has become the dominant form.

In connection with the conversion of industry to multiple-shift operation, measures are being carried out to feed those working in the evening and night time. As a result, the number of second shift workers enjoying hot meals increased by one-third, the number of third shift workers receiving hot meals increased by one-half.

The network of highly specialized fast service enterprises has expanded considerably. The number of [customer] places in them increased by 44,500 in 1986. New enterprises are being created that offer food in combination with various forms of recreational pursuits for the population. They take the form of youth cafes, book lovers' cafes, theatrical cafes, cafes for chess lovers, etc. Last year, 580,000 additional [customer] places were added in dining rooms, restaurants, cafes, and snack bars. At the beginning of 1987, the country numbered 339,000 public catering enterprises with 21 million [customer] places.

Their services are daily enjoyed by more than 125 million. Efforts to expand the public catering network and to improve the quality of service are continuing.

At the behest of the USSR Ministry of Trade, the Scientific Research Institute of Public Nutrition is developing rations for various cohorts of the population. They are based on norms approved by the Institute of Nutrition, USSR Academy of Medical Sciences regarding the need for nutritional substances and energy. Rations for school pupils and vocational-technical school trainees have already been compiled and are being put into practice. Nearly completed are the rations for students and for five occupational groups of working people (depending on the nature and conditions of their work).

The sector is being converted to industrial food preparation technology that makes it possible to significantly improve the quality of the product and to use labor and material resources more effectively. Under the 12th Five-Year Plan, the network of public catering enterprises will increase by 4.7 million [customer] places or by 23.1 percent, including an increase of 4 million at places of work and study.

[Question] The development of any sector of the national economy today is inconceivable without the use of advances in science and technology. What is the role of scientific-technological progress in the public catering sphere? To what extent are its personnel satisfied by the equipment that they presently have to deal with?

[Answer] Only by introducing industrial technology based on scientific-technological progress is it possible to satisfy the population's growing need for public catering products, to increase the sector's economic effectiveness, and to improve the quality of service to the population. The reference is in particular to the organization of the centralized production of convenience foods [polufabrikaty vysokoy stepeni gotovnosti] at industrial and public catering enterprises and their guaranteed, integrated supply to what we call final-processing enterprises, the latter are relieved of the primary processing of raw materials and of preparing dishes from scratch. It is important to make significantly more efficient use of highly productive equipment.

Under the 11th Five-Year Plan, the necessary material prerequisites were established for the broader industrialization of the sector. Scientific research and design institutes have developed technical norms for the production of convenience foods, standard designs of convenience food factories capable of processing 10, 15, 25, and 40 tons of raw materials per shift, final-processing enterprises, the organizational-technical principles of their operation and technical norms for outfitting public catering enterprises. Minleggospchemash [Ministry of Machine Building for Light and Food Industry and Household Appliances] is serially producing new, highly productive equipment.

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Under the 12th Five-Year Plan, public catering enterprises with 3.3 million [customer] places are slated for conversion to industrial methods of food preparation.

But in this work there are difficulties and inhibiting elements such as the lack of capital investments for the development of the sector's material-technical base, and the absence or shortage of certain types of equipment. The supply of public catering enterprises with serially produced equipment is presently less than 60 percent throughout the nation as a whole and for certain types of equipment is even lower: electric kettles—50 percent, vegetable processing machines—40 percent, flour and dough processing machines—17.6 percent. The quality of new production equipment frequently does not meet modern demands. Many types of equipment is in need of serious improvement and should be provided with automatic means of monitoring production processes.

In order to satisfy trade organizations' orders for equipment more completely, 10 other machine building ministries in addition to Minleggishchemash will be producing this equipment during the current five-year plan.

[Question] The transition to new methods of management in public catering (as in other sectors) is accompanied by economic norms and incentives aimed at more intensive labor activity of the work force: pay becomes dependent on performance. Please explain what these incentives are? What is considered as performance and how are wages differentiated accordingly?

[Answer] The new conditions of management envisage the increased independence of public catering enterprises (organizations) and higher incentives for fulfilling plan indicators and improving the quality of service to the population. The source and procedure for forming material incentive funds are being changed. The wage fund, which is formed on a residual-performance basis, is presently the source of wage and material incentive funds. It is residual because it is formed from income left at the disposal of enterprises (organizations). It is performance-oriented because the size of the fund depends on the performance of enterprises (organizations), on the growth rate of commodity turnover, on the sale of own output, and on the production of high quality products.

The potential for work incentives, especially for skilled work, is expanded considerably. Various kinds of *nadzharki* [increments] and *depalya* [additional payments] in wages are being introduced. These *nadzharki* are primarily for a high degree of mastery of a blue-collar occupation (up to 24 percent of the wage rate or salary). Highly skilled specialists may receive *nadzharki* up to 50 percent of their salary depending on the amount and complexity of their work.

Enterprises (organizations) are also authorized to grant *depalya* in the amount of up to 50 percent of the basic wage rate (salary), etc., to persons who perform more than one job (duty), who expand their service zone, or

who increase their work volume. If their work indicators and the quality of their service to the population deteriorate, the *nadzharki* and *depalya* are reduced or terminated. Thus, wages are made dependent on performance.

[Question] Now that wine and vodka have been taken off the menu of many restaurants and cafes, public catering workers must display culinary skill, high quality service that attracts customers, and a varied assortment in order to meet their quotas. But the most important question is: how do enterprises solve the profitability problem under these conditions? Do they receive assistance from the Ministry of Trade in this respect? What specific form does it take?

[Answer] The USSR Ministry of Trade has approved new rules governing the sale of vodka and other alcoholic beverages at retail trade and public catering enterprises. Under these rules, the sale of alcoholic beverages is permitted at only 2 out of the 23 types of public catering enterprises (restaurants and conventional cafes). At the same time, many restaurants and cafes are even now operating without the sale of wine, vodka and beer. In September 1985 the USSR Ministry of Trade conducted an all-union seminar-conference of heads and specialists of union republic ministries of trade and other organizations in Kharkov, which discussed the conversion of enterprises that had previously sold alcoholic beverages into consumer service enterprises. On the basis of its work, recommendations were made on improving the operation of public catering enterprises in the light of decrees of the CPSU Central Committee and USSR Council of Ministers on measures to combat drunkenness and alcoholism and to eradicate moonshining. The work experience of collectives at public catering enterprises in Kharkov and Lvov oblasts in the Ukrainian SSR, the Lithuanian SSR, and Belgorod Oblast in the RSFSR was summarized and recommended to union republic ministries of trade. Recipes for desserts and nonalcoholic cocktails were sent to the public catering system and heads of trusts and associations were ordered to use the best enterprises and most highly qualified specialists as the basis for training practical workers in the technology of preparation of preparing and serving the new dishes and beverages to their customers. The sale of juices, nonalcoholic beverages, and ice cream has been considerably expanded.

In order to improve the work of youth cafes, in May 1986 the USSR Ministry of Trade together with the Central Committee of the VLKSM [Komsomol], VTsSPS [All-Union Central Council of Trade Unions], Tsentrosoyuz [Central Union of Consumers' Cooperatives], and the USSR Ministry of Culture drew up a special statute that recommended the conversion of dining rooms into youth cafes at production enterprises, VUZ's [institutions of higher learning], technicums, and clubs.

To date, the number of public catering enterprises selling alcoholic beverages in the nation's cities alone has declined by 18,300 units or by 73 percent and by 81,94

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percent in the Turkmen, Uzbek, Azerbaijan, Armenian, Kirghiz, Moldavian, and Tajik union republics. In all union republics, public catering enterprises that have discontinued the sale of alcoholic beverages have been converted into cafes and ice cream, juice, soft drink, confectionery, and dessert bars.

Republics are opening highly specialized fast service enterprises, numerous outdoor summer cafes where one can not only get a bite to eat and have a juice drink but can also relax.

The character of restaurant operation has changed. Many of them now more frequently feature ethnic cuisine of peoples of the USSR, offer family meals, various kinds of festivities, alcohol-free weddings, and offer a more varied dinner menu.

The losses in trade turnover in public catering due to the discontinuance of the sale of alcoholic beverages have been completely offset and the population approves of the respecialization of enterprises.

[Question] Under the new conditions of management, what changes will take place in relations with such close neighbors as suppliers of products from the APK agro-industrial complex?

[Answer] In addition to the APK, it would also be possible to name the USSR Minrybkhоз [Ministry of the Fish Industry]. With regard to the supplying of public catering enterprises, in addition to the supply of raw materials, particular emphasis should be placed on the supply of prepared food, specifically: meat, fish, and vegetable convenience foods produced at enterprises belonging to USSR Gosagroprom and USSR Minrybkhоз. Today, the share of industrially prepared foods in the expenditure of raw materials at public catering enterprises in the state trade system is insufficient and in the case of meat products is—34.6 percent; fish products—38.4, peeled potatoes—only 5.8 percent; and prepared vegetables—less than 1 percent. The public catering industry is receiving negligible shipments of meats prepared in small cubes and portions, prepared poultry specialty dishes, as well as dumplings, pancakes, sauteed vegetables, vegetable and goat patties, etc.

The Comprehensive Program for the development of consumer goods production and the service sphere in 1986-2000 calls for Gosagroprom and Minrybkhоз to increase deliveries of prepared meat and fish 2.5-fold; peeled potatoes—7-fold, and prepared vegetables—8.8-fold in the year 1990. However, the volume of production of these prepared foods coordinated by industrial enterprises in union republics does not correspond to the demands of the comprehensive program. Thus, relations with these closest neighbors cannot be considered satisfactory.

[Question] Among public catering enterprises there are those who enjoy renown among their customers. Their food is good, the quality of service is high and their atmosphere is pleasant. People are eager to go there. But can you name any oblast or kray public catering administration that has been successful organizing good nutrition on a mass scale?

[Answer] There are many oblasts, krays and autonomous republics in the nation where the mass nutrition of various population cohorts is well-organized. For example, the Public Catering Administration of the Lvov Oblispolkom [oblast executive committee] has organized food service for pupils attending general education schools and for blue and white collar workers at industrial enterprises. It has mastered industrial technology and is boldly applying innovations of scientific-technological progress. Thus, in Lvov a rebuilt factory has been transformed into a large school food service production association. And now 90 percent of the pupils have hot meals that are balanced in terms of basic nutritional substances, the quality of the product has been improved in school dining rooms, and there is stricter oversight over the observance of the technology of food preparation, investment norms, and the observance of sanitation rules.

Much is being done to improve forms of consumer service in the urban network of public catering enterprises in Kharkov Oblast. Here, enterprises that no longer sell alcoholic beverages have been converted into specialized fast service enterprises that offer juices, soft drinks, desserts, ice cream, confectionery and culinary items.

Significant successes in the organization of nutrition of blue and white collar workers at industrial enterprises have been achieved in the Latvian SSR, Belorussian SSR, Dnepropetrovsk, Sverdlovsk, and Penza oblasts, in the Tatar ASSR and other regions of the nation.

The "secret" of the success of the enumerated republics and oblasts is that measures to improve services for the population are actively supported by local party and soviet organs and are funded by industrial enterprises, the local budget, by a five-percent withholding from housing construction allocations, and by Gosbank and Stroybank loans.

The experience of the Veforets Food Service Combine is very appealing and has been described repeatedly in the press, including our journal. Participants in an all-union conference were introduced to the experience of the VEF Production Association in 1984; a school of progressive experience was organized at the USSR VDNKh [Exhibition of Achievements of the USSR National Economy]; in 1986, a topical exhibit "Concern and Attention for Everyday Production" was held at the same place so that there is a sufficiency of information about it. What kind of participation is the USSR Ministry of Trade taking in the dissemination of this experience?

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[Answer] The Vefovets Food Service Combine, which serves the Riga VEF Production Association im. V. I. Lenin, has for three five-year plans in a row won first place in the All-Union Socialist Competition and has been awarded the Challenge Red Banner of the CPSU Central Committee, USSR Council of Ministers, VTSAPS, and Central Committee of the VLKSM and has had its name inscribed on the All-Union Board of Honor at the USSR VDNKh.

Its excellent work has been based on the total mechanization and automation of production processes and service. But the most important aspect of this service is not so much the introduction of advances of scientific-technological progress in public catering as the joint problem-solving effort of the production enterprise and food service combine enterprises.

The VEF experience is now being used by those enterprises in the nation that have considerable industrial potential and that can fabricate the necessary equipment themselves. The Latvian affiliate of Giprotorg [State All-Union Institute for the Planning of Trade and Public Catering Enterprises] of the USSR Ministry of Trade is performing planning work for a number of production associations and enterprises in Minsk, Saratov, Kiev, Dnepropetrovsk, and elsewhere.

At the suggestion of the USSR Ministry of Trade, USSR Gosplan has directed a number of ministries (Ministry of Machine Building for Light and Food Industry and Household Appliances, Ministry of Instrument Making, Automation Equipment and Control Systems, Ministry of Heavy Machine Building, and the Ministry of Construction, Road and Municipal Machine Building) to develop prototypes of equipment packages modeled after those functioning at the Vefovets food service combine, in 1987-1988 and to commence series production of this equipment in 1989.

[Question] Many industrial enterprises have converted to operation in two and three shifts. How is this affecting the work of plant dining rooms?

[Answer] Managers of public catering organizations and workers' dining rooms, together with the administration and trade union committees of enterprises converted to multiple-shift operation, participate in the organization of meals for evening and night shifts.

Dining rooms and snack bars in production and in hostels, taking into account the opinion of work collectives, have established a work routine that is convenient for those working the evening and night shift. They also provide hot, balanced meals immediately before and after the shift. The variety of the menu has been significantly expanded.

Industrial enterprises may offer hot meals free of charge or at a reduced rate for persons working the night shift at the expense of the fund for sociocultural measures and

housing construction (social development fund). Thus, in Leningrad 30 percent of those working the second shift and 40 percent of those working the third shift receive meals at a reduced rate. In agreement with enterprise trade union committees, 65 dietetic dining rooms (divisions) have extended their hours of operation to evening. About 500 dining rooms serve hot breakfasts from 0630 to 700 hours. Before the morning shift begins, about 160 dining rooms and snack bars are open to hostel residents.

Night and evening shift workers are also served by vending machines that dispense cold dishes, sandwiches, juices, and hot beverages as well as by honor system tea and vitamin stands. At enterprises with a continuous production process, hot food is delivered in individual thermoses to the work place or lunch rooms for workers who do not have a regular break.

Kharkov has resolved the problem of organizing hot meals round the clock for all electric passenger transport workers. The Streetcar-Trolley Bus Administration im. 60-let Sovetskoy Ukrayiny employs 10,000 transport workers, including more than 2,000 drivers. Special transport delivers food to dispensing points at terminal stations where things are organized in such a way that the driver, after driving his vehicle to the reserve line, can eat unhurriedly during his break. At stations where there is no possibility to open dispensing points in stationary buildings, food enterprises are housed in converted trolley buses that visit terminal points according to a fixed schedule. As many as 90 percent of the drivers here receive hot meals without waiting in line.

It should be mentioned in particular that in connection with the transition to operation in two and three shifts, there is inevitably an increase in the need for public catering specialists capable of working under these conditions. Thus it is important that measures to strengthen the moral and material incentives for workers in production branches converted to multiple-shift operation also be extended to those who provide workers with hot meals.

[Question] What is the sector doing to develop progressive forms of labor organization and pay?

[Answer] As in other sectors, public catering enterprises have begun using the brigade form of labor organization and work incentives. At the present time, over 6,000 public catering enterprises, where work is evaluated on the basis of performance, are operating under brigade contracts. Brigade members distribute collective earnings according to the coefficient of labor participation. Special attention is devoted to the creation of integrated trade-production brigades consisting of kitchen and dining room personnel. This makes it possible to turn out better culinary products by combining occupations and employing a smaller work force.

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As practice shows, the introduction of collective forms of labor organization and work incentives increases labor productivity by 8-10 percent while simultaneously conserving labor resources. The USSR Ministry of Trade is actively promoting the introduction of the brigade contract, the aim of which is to attain high performance at a minimum cost on the basis of material incentive and the development of the initiative of personnel in expanding services, at state public catering enterprises.

Family members of workers and specialists in all categories can also work in a collective operating on a contract basis under the conditions of multiple job-holding.

[Question] The law of the USSR "On Individual Labor Activity" took effect this May. What effect has it had on the work of public catering enterprises?

[Answer] The law on individual labor activity has no direct relationship to the public catering sphere. Here, it would probably be more appropriate to mention that the decree of the USSR Council of Ministers "On the Creation of Public Catering Cooperatives" was adopted on 5 February 1987. This measure is directed toward the more complete satisfaction of the population's needs for public catering services. The basic goals underlying the creation of cooperatives are: to expand the network of public catering enterprises (primarily by using premises allotted for this purpose by executive committees); to increase the volume of services rendered the population by them; to draw additional food resources into the sector through cooperatives' purchases from the population, collective farms, state farms, and in collective farm markets; and to utilize the labor of citizens not employed in social production, i. e., to utilize additional labor resources.

The USSR Ministry of Trade and its organs at the local level are purposefully working to organize a broad network of such enterprises. In February 1987, local trade organs were given one month in which to submit to executive committees of local Soviets of People's Deputies proposals on the allocation of the necessary premises, equipment, and material-technical supplies for the use of cooperatives.

The USSR Ministry of Trade sent out its specialists to render practical assistance in all union republics from January to April. Local trade organs were advised to carry out explanatory work among pensioners, housewives, and students and to use television, radio, the press, and other mass media to inform the population about the creation of public catering cooperatives.

No fewer than a thousand such enterprises had been organized throughout the nation by the beginning of 1988. These questions are being actively addressed by ministers of trade in the Uzbek, Ukrainian, Kirghiz, Lithuanian, Moldavian and Tajik union republics, in Volgograd Oblast, in Stavropol Kray, and elsewhere in the nation. In a number of places, interdepartmental

coordinating commissions have been set up under oblast, kray, and city executive committees of Soviets of People's Deputies. The commissions are staffed by officials of executive committees, departments of USSR Gosbank, financial and trade organs, and representatives of territorial transport organizations. This helps the cause.

Thus, with the aim of attracting pensioners to jobs at cooperative enterprises, the interdepartmental commission in Ulyanovsk Oblast sent out special invitations to former managers of dining rooms, heads of production facilities, and workers in the mass occupations. Many pensioners eagerly responded. Similar work is being carried out in the Tatar ASSR, in Ivano-Frankovsk, Ternopol, Lvov oblasts, and elsewhere.

In determining the profile of cooperatives created in Ternopol and Ivano-Frankovsk oblasts in the Ukrainian SSR in Gomel and Mozyr in the Belorussian SSR, and in Moscow Oblast, the orientation was toward the organization of small narrowly specialized enterprises as well as enterprises specializing in ethnic cuisine. The cooperatives are organizing their work and are purchasing products from the population, from kolkhozes and sovkhozes and in the markets. They are authorized to purchase foods that are available in sufficient quantity according to a list established by the executive committee of the local Soviet of People's Deputies at state and cooperative trade enterprises for retail prices without discounts.

But analysis of existing cooperatives has shown that most of them are based on state public catering enterprises, which does not correspond to the goal set by the executive organs—to expand enterprises serving the population on the basis of cooperatives. In many cases, the determination of the specialty of a new cooperative has not taken into account the existing structure of the network of state enterprises, the population's demand for culinary products and the available food resources.

As a result, certain negative trends have been noted in the development of cooperatives. There have appeared cooperatives that specialize in the production and sale of cotton candy, caramels, Eastern sweets, etc. The majority of the output of many cooperatives is made of raw materials acquired at state trade enterprises. The list of products received by cooperatives in state trade often include commodities for which the people's demand is not entirely satisfied.

In the process of forming cooperatives, one of their basic tasks—to draw additional labor resources into social production—is not taken into account. Checks show that only 54 percent of the cooperative members are pensioners, housewives, students, and pupils. In the Georgian SSR, this indicator is 24 percent; in the Belorussian SSR—43, and in the RSFSR—46 percent.

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It should be emphasized that the creation of public catering cooperatives should be based on the Model Cooperative Charter ratified in the 5 February 1987 decree of the USSR Council of Ministers.

The talk [interview] was conducted by V. VEREMEYEV

From the editors. You, the reader, will understand that it is difficult to treat all problems associated with the development of public catering in a single article. The interview presents a picture that is generally encouraging. And this is truly the case. Much has now been done in the sector to turn things for the better. But all the same, our meetings with public catering workers in production and especially in the urban network frequently leave a feeling of sadness. In some cases one has to stand in a long line, in others the food is poorly prepared and the quality of service is poor.

How can these shortcomings be corrected quickly? What must be done? And above all, which levers for influencing the work of public catering enterprises are most effective? We invite you to take part in the discussion of these questions. 5013

GOODS PRODUCTION, DISTRIBUTION

Summary of Trade Turnover Growth, 1928-1986 1827002* Moscow SOVETSKAYA TORGOVLYA in Russian No 11, Nov 87 pp 2-7

[Article by R. Lokshin, doctor of economic sciences and USSR State Prize winner: "The Time for Review Is the Time for Research: Commodity Turnover and Consumption"]

[Text] It is natural to assess the development of commodity turnover and public consumption of material wealth over the 70 years of Soviet rule by comparing them with their initial levels. At the same time, another reference point is required—the extent to which the achievements in this area meet the targets that were set and the potentialities of the socialist production method.

The restructuring now under way in all areas of the country's economic and social life is still being displayed very poorly in the development of retail commodity turnover and in meeting the demand of the public, which spends roughly three-fourths of its monetary income to purchase goods. Commodity turnover plans have not been fulfilled in recent years. We must make up for what has been neglected as rapidly as possible. The exceptionally important decisions of the April (1985) Plenum of the CPSU Central Committee, the 27th party congress,

and the June (1987) Plenum of the Central Committee are aimed at this. Overcoming the lag is an urgent task for both the area of trade and the country's entire national economy complex.

After inheriting an economy ravaged by an imperialist war, the Soviet Government had no breathing space for peaceful construction, since it was compelled to defend the gains of the October Revolution from international and domestic reaction. In order to rebuild and further develop the economy and overcome the effects of the wars which had continued for 7 years, it had to introduce a new economic policy to organize an exchange between industry and agriculture based on trade, using the tools of commodity-money relationships, to carry out economic activity on cost accounting principles, and to reinforce the circulation of money. These measures were aimed at increasing the national welfare, stimulating high labor productivity, and achieving public control over the extent of labor and the extent of consumption.

In order to restore the exchange between the city and the countryside that had been broken, private capital was enlisted and the task of collectivizing trade was set at the same time. While private trade made up 75.3 percent of the retail commodity turnover and 18.1 percent of the wholesale commodity turnover in 1922-1923, this proportion was reduced to 40.7 and 7.9 percent, respectively, by 1926. The proportion of private trade in retail commodity turnover calculated in prices comparable with state trade was even lower—38.8 percent.

The successful exclusion of private capital was achieved by the forces of cooperative and state trade because the bulk of the goods were concentrated in the hands of the state, and they were sold to the public at prices lower than in private trade. Wholesale trade was concentrated to a large extent in state syndicates specialized by product types.

By 1928, the output of industry and agriculture had surpassed the level of volume in 1913, and the amount of commodity turnover before the war was exceeded as well.

The increase in national consumption and retail commodity turnover and improvement in its structure are the most important characteristics of the socialist economy over the 70 years of its development, which reflects society's continuing concern about more fully meeting the requirements and effective demand of the public. As a result, the volume of retail commodity turnover by state and cooperative trade in 1986 was roughly 30 times higher than the 1928 level, and 13 times higher than the 1940 level.

The dynamics of the commodity turnover of collectivized trade are demonstrated by the data in Table 1

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Table 1

Years	Commodity turnover in prices of the corresponding years, in billions of rubles	Growth of commodity turnover in comparable prices, in times (1928 = 1)	Growth of commodity turnover in comparable prices, in times (1940 = 1)
1928	1.2	1.0	0.43
1932	4.0	1.34	0.57
1937	12.6	1.99	0.86
1940	18.0	2.33	1.00
1945	16.0	1.01	0.43
1950	36.0	2.49	1.07
1955	50.2	4.70	2.02
1960	78.6	7.36	3.17
1965	104.8	9.82	4.23
1970	155.2	14.58	6.28
1975	210.4	19.82	8.54
1980	270.5	24.65	10.6
1985	324.2	28.6	12.3

The ascending line in the growth of commodity turnover was broken in specific periods because of the wars imposed on the country and the necessity of overcoming their destructive consequences, as well as in connection with the fundamental reorientation of the socioeconomic structure of the national economy during the years of industrialization and collectivization and with the search for specific ways and means to shift agriculture to the socialist path of development. A rationing system had to be introduced to supply the public (1918-1921, 1929-1934, and 1941-1947). Altogether almost 20 years were excluded from the 70-year balance of time, which influenced the slowdown in the rates of economic development and prevented the achievement of a higher level of national welfare. Thus, the physical volume of retail commodity turnover in 1945 was nearly 2.5 times less than in 1940. Five years were required to restore it.

The average annual volume of the commodity turnover increase by five-year plans basically grew, adding up to 2.8 billion rubles in the 5th Five-Year Plan, 5.7 billion in the 6th Five-Year Plan, 5.2 billion in the 7th Five-Year Plan, 10 billion in the 8th Five-Year Plan, 11 billion in the 9th Five-Year Plan, 12 billion in the 10th Five-Year Plan, and 10.7 billion rubles in the 11th Five-Year Plan.

Analysis shows that the necessary systematic growth in commodity exchange was not provided for and that disruptions and losses of the positions gained were allowed. Interruptions in trade or overstocking cropped up periodically.

The decrease in the absolute growth of turnover in the 7th Five-Year Plan occurred in 1961-1964, when the average increase for a year amounted to 4.5 billion rubles. This was related to the significant lag in the production of consumer goods and a slowdown in the development of agricultural production, and accordingly, of the food industry sectors. The quality of a number

of commodities and the prices for them did not correspond to incomes and public demand. The sale of goods slowed down. The level of trade inventories increased by 20 days of turnover in 1964 compared with 1960.

The steps taken in 1965 to normalize the economy showed up in increased production growth rates in Group "B" sectors and increased personal income and commodity turnover. It increased in volume by 8.4 billion rubles in 1965, nearly twice the average annual increment over the preceding 4 years. These positive shifts were not consolidated, however.

A decline was also observed in the 11th Five-Year Plan. The average annual increase in commodity turnover for the 1981-1984 period was 11.4 billion rubles, but in 1985 it amounted to only 8.1 billion rubles; this was the result of disparity in the retail prices for individual commodities set in 1981. The stock of goods increased for this reason and because a number of commodities were produced without taking increased consumer demand into account. The level of stocks increased by 22 days over 5 years. The decline in commodity turnover growth was related to steps taken in the struggle against drunkenness as well. The sale of alcoholic beverages in 1985 dropped by nearly 5 billion rubles compared with 1984, and sales dropped by more than 10 billion rubles in 1986 compared with 1985. At the same time, the sale of commodities (excluding alcoholic beverages) increased over the preceding year: by 13.4 billion rubles in 1985 (5.1 percent) and 18.3 billion rubles (6.6 percent) in 1986, in the prices that had been set. In comparable prices, taking into account the reduction of prices for a number of commodities in 1986, the rate of growth was 7.1 percent. The average annual increase in turnover for commodities (excluding alcoholic beverages) in the 1981-1984 period amounted to only 9.5 billion rubles, or 3.9 percent.

But these relatively high volumes and growth rates for turnover did not make up for the decline in alcoholic beverage sales. Industry and trade proved to be unprepared for such an abrupt change in the structure of

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commodity turnover and public demand. In most regions of the country, production expansion and more active involvement in turnover of goods needed by the public have lagged behind the measures taken locally to reduce the sale of alcoholic beverages.

Figures on the volume and growth rates of retail commodity turnover in state and cooperative trade were cited previously. To make the picture complete, we will provide the data on overall commodity turnover, including private and peasant market trade. In 1928, private trade comprised 24 percent of retail commodity turnover, and peasant market trade provided for 40 percent of the overall sale of foodstuffs to the public. Taking this

into account, the volume of the country's retail commodity turnover in 1986 increased by an estimated 20.3 times as much compared with 1928 in comparable prices.

It is common knowledge that private trade, not counting the secondhand dealers who charge speculative prices for commodities acquired in state and cooperative trade, as well as the independent sale of articles made in individual labor activity, was excluded from retail trade turnover by 1932.

Figures on the increase in retail commodity turnover in state and cooperative trade compared with the targets set by five-year plans are of interest (Table 2).

Table 2

Five-year plans	Increase in commodity turnover in comparable prices for the 5 years, in percent (under the five-year plan)	Actual increase in commodity turnover in comparable prices for the 5 years, in percent
First (1928-1932)	65	34
Second (1933-1937)	2.5 times as much	40
Third (1938-1940)	34*	17
Fourth (1946-1950)	28 percent over 1940	7**
Fifth (1951-1955)	70	89
Sixth (1956-1960)	50	57
Seventh (1961-1965)	36	33.6
Eighth (1966-1970)	1.4 times as much	48.8
Ninth (1971-1975)	1.4 times as much	36.4
Tenth (1976-1980)	28.7	24.4
Eleventh (1981-1985)	23	18
Twelfth (1986-1990)	19.4	—

* Commodity turnover should have increased by 6.3 percent over 5 years and 34 percent over the 3 years, based on the average annual increase (10.25 percent).

** The volume of commodity turnover in 1950 was nearly 2.5 times higher than the 1945 level.

The targets set for increased commodity turnover in the Ninth and Tenth Five-Year Plans were not fulfilled. The plans which have stipulated growth rates in the 1986-1987 period are not being fulfilled, either.

The scale of production and commodity turnover which has been reached and the complicated relations between sectors and union republics require not only organizational changes in managing the consumer goods market but greater mutual responsibility between suppliers and consumers, based on strict cost accounting and compensation for losses.

Important qualitative changes have taken place in the structure of retail commodity turnover. The proportion of nonfood consumer goods has risen naturally in overall turnover—from 37 percent in 1940 and 41.6 percent in

1950 to 52.8 percent in 1986. The proportion of cultural-personal and household goods in turnover during the same periods increased from 5.9 percent and 10.4 percent to 18.7 percent.

It is significant that the proportion of basic necessities in mass demand, such as bread and bakery products, sugar, tea, salt, laundry soap, matches, kerosene and tobacco, decreased sharply. In 1940 they comprised 24.7 percent of all retail commodity turnover in state and cooperative trade; they accounted for 22.1 percent in 1950, 13.1 percent in 1965, and 7.8 percent in 1986. The absolute turnover for this group of commodities increased from 8 billion rubles in 1950 to 25.9 billion rubles in 1986.

Sales of the most important foodstuffs are shown in Table 3.

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Table 3

Commodities	1950	1986
Bacon		
Meat and meat products, in millions of tons	1.14	12.8
Animal oil, in thousands of tons	230	1,563
Milk and dairy products, calculated in millions of tons of milk	1.63	38.4
Eggs, in billions	1.5	48.5
Confectionery, in thousands of tons	928	4,500
Sugar, in thousands of tons	1,184	8,635
Grain products, calculated in millions of tons of flour	15.8	38.8

Public dining accounts for 17 percent of the sale of foodstuffs in turnover, and 20.4 percent if alcoholic beverages are excluded. This proportion decreased in 1986 compared with 1980, when it amounted to 21.3 percent. The popular fast service network is extremely inadequate. At the same time, trade has considerable reserves at its disposal, which are being poorly utilized at present, to increase the turnover in public dining.

Sales of fabrics, clothing, linen and knitted goods to the public increased from 6.5 billion rubles in 1950 to 52.3 billion rubles in 1986, and the proportion of finished products during this period rose from 39 to 85 percent.

The positive shifts in the structure of commodity turnover are obvious. However, they do not make up for those major shortcomings in developing the production of commodities needed for individual groups of the population—the youth, children, the elderly, and families of different income levels. A significant quantity of goods is being produced without taking trade orders into account, and at times even the orders themselves are made up when not enough is known about the demand. Many commodities, including ones which are technically complex, are rejected and the society incurs heavy losses from defective products and the return of items for repair. Discussions about turning out fashionable goods have been under way for a long time, but there are very few of them in the market and many persons still wait for the imported commodities.

The new economic mechanism has not begun to act with full effect in resolving this major task—ensuring that commodities are produced by taking demand into account.

The development of commodity turnover in rural and urban localities reflects a process of convergence in per capita sales when there is an absolute extension of the gap in the level of turnover at the same time (Table 4).

Table 4

Year	Commodity turnover per capita in urban areas, in rubles	Commodity turnover per capita in rural areas, in rubles	Excess of urban over rural turnover, in rubles	Excess of urban over rural turnover, in times
1928	295	32	263	9.2
1950	383	80	303	4.8
1965	660	222	438	3.0
1975	1,074	450	624	2.4
1985	1,429	675	754	2.1
1986	1,455	661	794	2.2

The relative convergence of the levels of turnover per capita in urban and rural areas is not corroborated by a more substantial reduction of the absolute gap between them, and the relative indicators became worse in 1986 as well.

The practical gap in purchases of commodities is much smaller, inasmuch as rural residents obtain a considerable amount of goods in the cities. For this reason, the resources of industrial commodities for rural areas must be more substantially increased so that conditions exist for rural residents to obtain needed goods in the area where they live.

To a significant extent, this situation is related to the lag in commodity turnover of consumer cooperatives, which

are the basic trading system in rural areas. The proportion of commodity turnover by consumer cooperatives in the overall commodity turnover of the country is declining. In 1965, it amounted to 29.6 percent, and in 1986 it was 27.2 percent. In rural localities, commodity turnover in consumer cooperatives declined in this period from 85.3 to 83 percent. Cooperative members are providing poor support for their consumer.

The differences in the average commodity turnover per capita for union republics are even more significant. These differences are related to the level of economic development, the ratio of urban and rural population, the role of nontrade sources in consumption (including production on private subsidiary farms), family size and

age range, the extent to which the public's effective demand is met in a republic, and local natural features, traditions, and other factors. The task is to bring the republics' levels of economic development—and the levels of prosperity expressed in commodity turnover based on this—closer together. In the course of continued upsurge in the economy, more intensive development of productive forces in republics will be required, taking full utilization of manpower and natural resources, a policy of self-sufficiency in food, and expansion of consumer goods production in each region into consideration.

High rates of economic growth also predetermine higher commodity turnover growth rates, which in turn establish objective conditions for improving economic indicators in the development of trade and its efficiency. This conclusion can be supported by indicators of the level of turnover per capita in 1965 and 1985 for Belorussia and Lithuania. The economy in these republics has been developed relatively more intensively than in others. While the indicator for turnover per capita with respect to the average for the USSR was 80 percent in Belorussia and 94 percent in Lithuania in 1965, it was 105 and 119 percent, respectively, in 1985. These republics took a major step forward in the level of consumption for many commodities and products, and as a consequence, in the level of turnover per capita.

An important item in the growth of commodity turnover is increasing its proportion in consumption by reducing the nontrade sources of consumption. Trade channels have begun to meet a more and more substantial proportion of public demand. This is related basically to kolkhozes' shift to a monetary wage. The proportion of monetary wages in kolkhoz farmers' incomes increased from 40 percent in 1953 to 94 percent in 1966 and to roughly 99 percent in 1985-1986. At the same time, kolkhoz farmers' wages in the public sector rose by 5.4 times as much in 1985 compared with 1960.

Views have been expressed in the press that the shift to a monetary wage instead of payment in kind would weaken interest in increasing labor productivity in agriculture. It seems to us that the monetary wage is not "to blame" for this, but the slackening of control over the proportion of labor and the proportion of consumption and the lack of correspondence between the money paid and the quantity and quality of material wealth, both in agriculture and in industry. The increase in commodity consumption is also related to the expansion of industrial processing of agricultural products and the concurrent reduction of processing under domestic conditions. A substantial proportion of the bread was baked at home in the relatively recent past (the 1930's to the 1950's), but now the vast majority of bakery products are made at large-scale bakeries. A similar process has affected the consumption of animal and vegetable oil, cheese, and macaroni and confectionery items. The role of public dining in the consumption of foodstuffs has also

increased, although insufficiently. The process of changing the nature of consumption has also applied to non-food items: less household sewing of clothing and footwear and the manufacture of furniture and other commodities.

The proportion of retail commodity turnover in personal consumption resources is increasing, as shown in Table 5.

Table 5

Years	Retail commodity turnover in percent of personal consumption resources (state, cooperative and kolkhoz trade)	Retail commodity turnover in percent of personal consumption resources (including state and cooperative trade)
1950	80	70
1980	88	84
1970	93	90
1986	94	91

The increase in commodity turnover in state and cooperative trade took place not only on the basis of increased industrial and agricultural production, but because of the change in consumption with respect to the different trade channels. In particular, the volume and proportion of kolkhoz trade fell sharply in the country's overall retail commodity turnover.

The kolkhoz market's proportion in the overall sale of foodstuffs in all trade channels, calculated with identical state retail prices, dropped from 27.5 percent in 1950 to 16.6 percent in 1965 and 4.3 percent in 1986. The picture with regard to the sale of individual products is as follows. The kolkhoz market's proportion for meat products dropped by 39 percent in 1986 compared with 1950 to a level of 3 percent. For milk and dairy products, these figures are 24 and about 1 percent, for eggs, 49 and 3 percent, and for potatoes, 69 and 30 percent, respectively.

Until recently, kolkhozes and sovkhozes were very poorly represented in the kolkhoz market. In accordance with the CPSU Central Committee and USSR Council of Ministers decree on improving the economic mechanism in the country's agroindustrial complex, adopted in 1986, kolkhozes and sovkhozes may sell up to 30 percent of the planned volume of purchases of potatoes, vegetables, melon crops, fruits and berries, and table grapes to consumer cooperatives and in the kolkhoz market and make use of above-plan agricultural production at their own discretion.

After adoption of this decree, participation by kolkhozes and sovkhozes in the sale of fruit and vegetable products and potatoes in the markets was revitalized somewhat. Loads of their produce increased by 3.7 times as much in 1986, but they still are extremely small in absolute size.

The activity of consumer cooperatives, agroindustrial associations, kolkhozes and sovkhozes in kolkhoz markets must be coordinated locally, their transfer to consumer cooperative management must be organized properly, and greater influence must be brought to bear to reduce the level of market prices. Not every kolkhoz and sovkhoz can develop a permanent trade network in the markets and maintain a regular assortment of vegetables and other products, and not all kolkhozes and sovkhozes have the personnel who have been trained for this at their disposal. Evidently, the experience of agroindustrial associations, which combine the forces and facilities of individual kolkhozes and sovkhozes and organize the sale of their products through the permanent trade network which is being established, has to be publicized.

In reviewing the stages of trade development in the USSR in the postwar period, we can single out the most important economic maneuver, which was carried out in mid-December 1947. After the devastating war of 1941-1945 and agriculture's worst harvest failure in 1946, a number of steps were taken simultaneously: the rationing system was abolished, common retail prices were introduced instead of the low rationing prices and high commercial prices and a monetary reform was implemented, and money was exchanged in accordance with a new policy. These steps were taken thanks to the planned economy system and the concentration of material resources in the state's hands.

It appeared possible, although on a still low economic base, to shift to large-scale trade and to balance the supply of goods to a certain extent with the effective demand of the public.

At present, the lag in the growth rate of commodity turnover behind the effective demand of the public; the deficiency in sales of a number of commodities; and their inadequacy to meet demand with regard to quantity, quality, assortment, and the particular requirements and income of individual groups of buyers are the

unresolved problems directly related to trade which have continued for a number of years. There are substantial differences in meeting demand in regions of the country and in urban and rural localities.

Industrial production of consumer goods (Group "B") and the volume of commodity turnover in state and cooperative trade exceeded the 1960 level by 4.1 times as much in current prices in 1985, but personal income rose by roughly 4.7 times as much in the same period. Imported commodities and the raw material to produce them made up for some of the lag in domestic consumer goods production.

The economic base which was the foundation for the reform of 1947 (the volume of industrial and agricultural production and personal monetary income, the level of cultural development, and the increased requirements based on this) is not comparable with the much larger scope at present and the production potential developed in the country. The volume of industrial production of consumer goods (Group "B") was approximately nine times higher in 1986 than in 1950, and gross agricultural production was three times higher—3.7 times higher including livestock breeding, while the population increased by 1.5 times as much.

Major qualitative shifts in the volume and structure of the public's consumption of material wealth took place on this basis. Figures on the per capita consumption of foodstuffs and the products of light industry are shown in Table 6.

New sectors to produce cultural and domestic items have been developed. The sales of these commodities and the extent to which families have been provided with them are reflected by the data in Table 7.

The increased production and consumption is reflected in the structure of retail commodity turnover.

Table 6

Commodity groups	1913	1950	1965	1986
Foodstuffs, in kilograms				
Meat and meat products	29	26	41	62.5
Milk and dairy products	154	172	251	332
Eggs, per 1	48	60	124	265
Sugar	8.1	11.6	34.2	44
Vegetables and melon crops	40	51	72	103
Grain products	200	172	156	133
Light industry products				
Fabrics, in square meters	13.4	16.5	26.5	37.0
Knitted goods, per unit	—	1.1	4.2	7.2
Hosiery, pairs	—	2.6	5.8	7.6
Leather, fabric, and combination footwear	0.4	1.1	2.4	3.4

Table 7

Commodities	Sales to the public, in thousands of units	Provision per 100 families, in units					
		1950	1960	1986	1960	1965	1986
Radio receivers	—	992	4,179	6,798	46	59	96
Television sets	—	12	1,488	8,630	8	24	99
Tape recorders	—	—	128	5,109	0.5	2	39
Cameras	16	234	1,506	1,997	18	24	34
Bicycles, motorbikes and mopeds	29	684	3,000	5,508	39	48	56
Sewing machines	272	510	3,337	1,337	35	52	65
Home refrigerators and freez- ers	—	1.2	518	4,681	4	11	92
Washing machines	—	0.3	907	4,846	4	21	70
Passenger cars (including those sold through commission stores)	—	—	62	1,671	1	1.3	16
Clocks	700	8,226	22,325	49,349	286	319	530

However, these improvements in consumption are far from sufficient to meet the increased requirements of the public.

The thorough, comprehensive economic reform embracing all aspects of life in the society which is under way has been called upon to bring the highest gains to the country.

The Basic Directions for Fundamental Restructuring of the Economy's Management approved by the June (1987) Plenum of the CPSU Central Committee open the way to resolve the many accumulated and critical problems in the country's development, including in the systematic control and management of the consumer goods market. The activity of central economic organs is being restructured, establishment of an efficient, flexible management system is being provided for, and the forms and methods of planned management are being changed, bringing them into conformity with the Law on the State Enterprise (Association).

As stated in M. S. Gorbachev's report at the June Plenum of the CPSU Central Committee, a basic reform in planning, price setting, and the financial and credit mechanism, a shift to wholesale trade in capital goods, and restructuring of the management of scientific and technical progress and foreign economic ties are being combined with a shift from an excessively centralized system of management to one that is democratic and to the development of self-management.

The introduction of planning principles in the country's economic life gradually covered all aspects of the national economy. The First Five-Year Plan for development of the national economy (1928-1932), in which targets for trade development formed an integral part, was preceded by the planned figures for 1925 and 1926. They were the first to specify the volume of trade

involving middlemen with the approximate apportionment among the state, cooperative, and private sectors. State planned targets for commodity turnover were not established for the individual trading systems in this period.

The planned figures for the national economy in 1926-1927 specified the overall scope of turnover involving middlemen by trade sectors, the volumes of wholesale and retail trade, the indicators for the turnover rate of capital in commodities, and the amounts of profit. Indicators of the dynamics of commodity turnover were worked out by the USSR Gosplan in this year for the Ukrainian and Belorussian SSR's and certain economic regions of the RSFSR.

In drafting the planned figures for 1927-1928, the USSR Gosplan was set the task of shifting from planned figures which were approximate in nature to a unified national economic plan and extension of its limits, including in the section covering the indicators of trade development.

Beginning in 1927-1928 the Council of Labor and Defense approved plans for the utilization of a rather substantial range of commodities—grain, sugar, cotton fabrics, footwear, and other items. The utilization plans outlined the channeling of resources to the market and for nonmarket purposes and the allocation of market funds between the cities and the countryside and among the trade systems, republics and provinces.

During the postwar years, there was a natural tendency to leave a number of the problems related to trade planning, commodity resources, and retail commodity turnover to the discretion of the union republics, as well as oblasts and krays. This stemmed from the fact that the development of trade and its material and technical base depends on a great number of factors which are shaped and more accurately weighed firsthand in the local areas. What has been stated applies in particular to the resources of agricultural products (meat, milk, eggs,

potatoes, vegetables, fruits, and so forth), and the plans for purchases in krays, autonomous republics, and union republics that are not divided into oblasts.

Since 1987, the planning of retail commodity turnover and market funds by trade systems has been conducted in oblasts and krays. Union republics, as well as oblasts and krays, now have the responsibility of balancing the monetary incomes and expenditures of the population and providing themselves with foodstuffs, and enterprises of union subordination located in the territory of the appropriate region are obliged to coordinate the plans for consumer goods production with them. A large number of resources are put together on the basis of the plans specified in the republics, krays, and oblasts. This involves output by enterprises of republic and local subordination; purchases of agricultural products by consumer cooperatives at prices that have been agreed upon; public dining turnover; the sale by kolkhozes and sovkhozes of part of their output (vegetables, fruits, melon crops, potatoes) in the kolkhoz market; commission trade in nonfood products; the development of cooperative forms of activity in the production of commodities, everyday services, and public dining; and the extension of individual labor activity.

In light of what has been stated, it seems advisable to reexamine the question of leaving the development of commodity turnover plans, the provision of goods and everyday services, and individual items in the balance of personal incomes and expenses to the discretion of the republics, krays and oblasts, keeping in mind their expression in planned figures and the issued result of the balance of personal monetary incomes and expenses, defined in a centralized procedure. At the same time, it is natural that that part of trade resources which is predetermined by state order be provided for in a centralized procedure. The proposed shift to independent formation of trade plans requires preparation, including personnel training, and that the effect of the Law on the State Enterprise (Association) beginning in 1988 be combined with the shift of trade to the new conditions in 1987.

Analysis of trade development in past years predetermines the problems that we will have to resolve in the near and long-term future. We should look first of all at the urgent need to eliminate shortages and balance the supply of goods with public demand for the entire range of commodities in all regions of the country, and to sharply improve the quality of goods. Solution of these problems cannot be restricted to maintaining total proportions for the country as a whole and the limits of macrodemand. This involves the establishment of equal conditions for obtaining goods with the work incomes in each republic, oblast and kray and in each city and rayon in order to avoid the need to travel from region to region and from the countryside to the city for commodities and to strengthen the purchasing power of the ruble everywhere. The problem of self-sufficiency in foodstuffs can be resolved more successfully where the new economic mechanism is in force in the agroindustrial association system.

The Great October Socialist Revolution's 70th anniversary year is a significant one for trade, with the entire sector's shift to the new conditions of economic operation, which envisage its development on the principles of full cost accounting and self-financing. Naturally, the implementation of this comprehensive reform assumes that cost accounting is introduced in all trade enterprises and structural units. In conformity with the Law on the State Enterprise (Association), trade organizations should be guided by common principles in their economic relationships with industry and agriculture and set mutually strict requirements which ensure that contract obligations are carried out. High quality of service to the public, fulfillment of commodity turnover plans, and utilization of considerable reserves to meet consumer demand more fully and comprehensively will be the indicators of efficiency for each trade organization.

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FUELS

Georgian Gas Pipeline Network Development Shown

18220062 *THILISI ZARYA VOSTOKA* in Russian
26 Dec 87 p 1

[Interview of Bakhva Fedorovich Lobzhanidze, chairman of the State Committee for Gasification of the Georgian SSR, by Galina Petriashvili: "The Network of Gas Arterials Is Being Expanded"]

[Text] The ceremonial opening of the 212-kilometer Kutaisi-Sukhumi trunk gas pipeline is being held today in the capital of Abkhazia, an event which is not only of paramount significance for the populace of these regions but also, to a great extent, of significance as a stage in development of the republic's gasification. We asked Bakhva Lobzhanidze, chairman of the State Committee for Gasification of the Georgian SSR, to tell about this.

[Answer] This event actually is remarkable in the general context of our work, in the development of gas arterials on the republic's land. Today they are 6,520 kilometers long, and the share of gas in the republic's fuel balance is now 52 percent, which is much more than the average for the country. The volume and pace of gasification has grown remarkably in the republic, beginning in 1982, and especially during the current five-year plan. This year alone, aside from Sukhumi, Abasha, Tskhakaya, Tsalka and Zugdidi obtained natural gas, and the total length of lines laid during the year was 400 kilometers.

A large amount of work was done in Eastern Georgia, where the Tsinvali-Dzhava and Dmanisi-Tsalka gas pipelines were turned over. While cities and rayon centers were being connected to gas lines, special attention was paid to gasification of rural communities. The villages of Shalauri and Kisiskhevi in Telavskiy Rayon, Matani and Khodasheni in Akhmetskiy Rayon, Kvemosakara and Argveta in Zestafonskiy Rayon, Dikhashkho in Vanskiy Rayon, Arashenda in Gurdzaanskiy Rayon, Tsodniskari in Lagodekhskiy Rayon, Ksovrisi in Miskhetkiy rayon, Choporta in Dushetskiy Rayon, and Kachagan in Marneulskiy Rayon obtained natural gas.

The introduction of new trunk gas lines is an event of the greatest importance in the national economy, in regard to both the amount of work done and that value that natural gas will have for the social and economic development of the rayons named.

[Question] At least we designated its value adequately.

[Answer] It is difficult to overestimate. It means also the conversion of enterprises that consume fuel to a more economical form of it. For comparison, I will say that a ton of mazut, for example, costs 45 rubles, but an equivalent quantity of gas costs 15 rubles less. And this, not counting expenditures for haulage, not taking into account the transport capacity that has been freed. Gas

in the home means heat and comfort, the improvement of living conditions, and, consequently, the retention of worker personnel in remote regions, primarily in agricultural production. And indeed this problem faces us very seriously today. The replacement of other types of fuel by natural gas relieves or at least greatly alleviates a number of ecological problems: it saves trees from being cut down, and this means also prevention of soil erosion, and it reduces sharply harmful discharges into the air basin.

[Question] Bakhva Fedorovich, at the start of the conversation you emphasized the amount of work carried out on the Kutaisi-Sukhumi segment. It was especially difficult?

[Answer] I would say that there are, in general, no "easy" parts in Georgia. But this line traversed especially difficult terrain. I will give a few figures that speak eloquently for themselves. Of 212 kilometers of the route, 41 kilometers passed through mountains, another 44 kilometers over rocky ground, 3 kilometers in swamps, and more than 100 over agricultural land. Add to this numerous crossings of cable communications lines, railroads and highways, ravines, rivers and irrigation canals. Each of the obstacles required precise analysis, reduction to a minimum of the inevitable destruction, professionalism, and sometimes even simply high-precision work—some places in mountainous regions, in places most difficult of access, we got along practically without motor-vehicle transport, we went by helicopter.

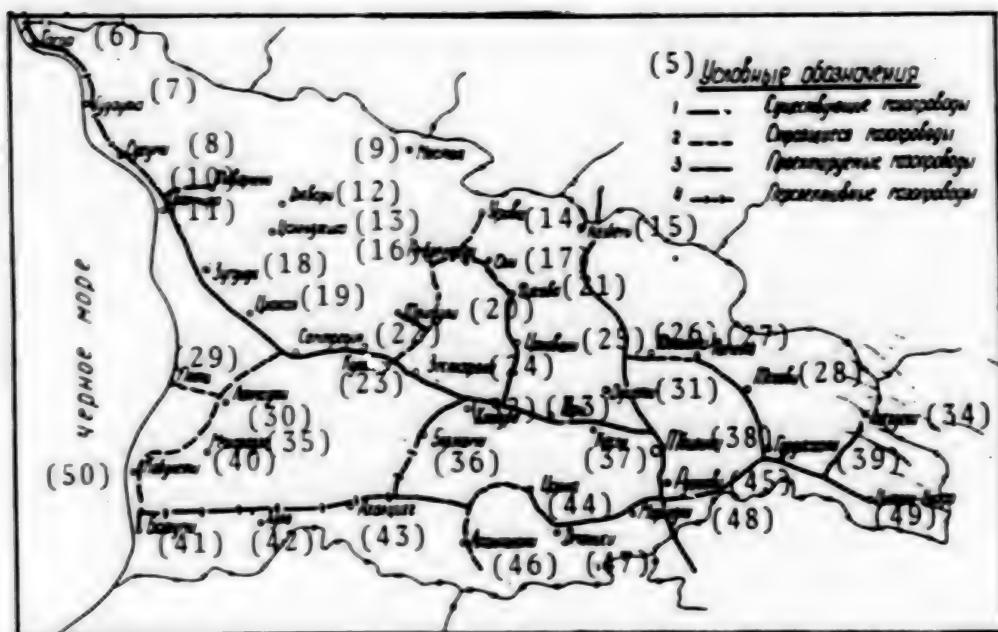
[Question] Such difficulties, so to speak, are natural. You knew about them previously and you were ready for them. But indeed there were also unforeseen....

[Answer] Floods and sudden landslides are natural disasters that attacked the western regions last winter, bringing so much trouble and harm, and on some sections they devastated what had been built. On the Gulripsh section, five kilometers of finished gas pipeline were carried away completely, and in places, after landslides, substantial revisions had to be introduced, so that, of course, additional forces and resources were needed.

[Question] Work under the difficult conditions undoubtedly required of the builders great skill and maximum performance. What organizations supported a good pace and the appropriate work quality?

[Answer] Georgian SSR Goskomgaz [State Committee for Gas Supply] and Gruztransgaz [Georgian Production Association for Gas Transport] did work on construction of the Kutaisi-Sukhumi line.

Gruzgazstroy [Georgian Trust for the Construction of Gas Industry Facilities], which Ushangi Peikrishvili heads, did a substantial amount of the work. Such elements of this trust as the Gurdzaani and the Abkhazian mobile mechanized columns supported the higher



Key:

1. Existing gas pipelines
2. Gas pipelines under construction
3. Gas pipelines being designed
4. Prospective gas pipelines
5. Legend.
6. Gagra
7. Gudauta
8. Sukhumi
9. Mestia
10. Tkvarcheli
11. Ochamchira
12. Dzhvari
13. Tsalengzhikha
14. Uravi
15. Kazbegi
16. Ambrolauri
17. Oni
18. Zugdidi
19. Tskhakaya
20. Tkibuli
21. Dzhava
22. Samtredia
23. Kutaisi
24. Zestafoni
25. Tskhinvali

26. Tianeti
27. Akhmeta
28. Telavi
29. Poti
30. Lanchkhuti
31. Dusheti
32. Khashuri
33. Gori
34. Lagodekhi
35. Makharadze
36. Borzhomi
37. Kaspi
38. Tbilisi
39. Gurzhaani
40. Kobuleti
41. Batumi
42. Khulo
43. Akhaltsikhe
44. Tsalka
45. Rukavi
46. Akhalkalaki
47. Dmanisi
48. Marneuli
49. Tsiteli-Tskaro
50. Black Sea

construction organization. The work of these collectives—both the management and the ordinary workers—deserves the highest of evaluations. Superintendent Givi Sikkharulidze, welder Mikhail Kirvalidze and equipment operator Albert Sepiashvili of the Gurdzhaani PMK [mobile mechanized column], and welders Aleksandr Perpelitsa and Petr Balyan, bulldozer operator Vladimir Manukyan, and superintendent Tamaz Chkhikveli of the Abkhazian PMK can be called the heroes of the construction project.

Other organizations also took part in erecting the Kutaisi-Sukhumi gas pipeline: the GESSR Goskomgaz Design Office, the Gruzorggaz Administration, Gruz-podzemmetalozashchita [Georgian Administration for Prevention of Metal Corrosion of Underground Facilities], and the Gruzgaztekhnika Industrial Design Office.

[Question] Construction of the new gas pipeline has been completed and another stage of the work has been traversed. What are the prospects for the very near future?

[Answer] We have gone into Sukhumi, Tsalka and Zugdili. Then the gasification of vast areas within a radius of the communities named. Gas will go even farther—into rural homes, to livestock departments of farms. The Kutaisi-Sukhumi line also envisions branches to Batumi and Poti—these jobs will be done before the end of the five-year plan. Already erection of the line from Terzholi in the direction of Ambrolauri and Uravi, with a tap to Tkibuli, is underway. In coming years erection of the gas pipeline to Akhalkalaki-Akhalsikhe with a tap to Bordanovka, will be completed, and pipe will be laid from the Kutaisi-Sukhumi pipeline to Tkvarcheli. Construction of a connecting line between Akhmeta and Tkaneti, which will create a ring system that will increase natural-gas supply reliability of all Kakheti, continues. The plan calls for the delivery of gas to Khobi, Gali, Ochamchira, Gulripsh, Tsulukidze and Gegechkori. These are the prospects. Strenuous prospects, but realistic ones.

11409

LABOR

New Types of Work Brigades Defined

18280040a Moscow MUKOMOLNO-ELEVATORNAYA I KOMBIKORMOVAYA PROMYSHLENNOST in Russian No 12, Dec 87 pp 29-30

[Article by O. Berg, Voronezh Technological Institute: "New Types of Brigades, Cost Accounting and Contract—What is the Difference?"]

[Text] Brigade organization of labor is being applied more and more extensively at enterprises of the USSR Ministry of Grain Products, and various types of brigades exist. A clear idea of the differences between various types of brigades makes it possible to determine correctly the paths to their further improvement.

The new type of brigade. In it workers are joined together not only technologically and organizationally, but also economically. This means that the collective earnings are distributed to the brigade according to the results of their labor and they are distributed by the brigade council, for example, taking into account the coefficients of labor participation (KTU). It is these attributes that distinguish the collective of the shift from the new type of brigade that is formed on the basis of it.

The new type of brigade can be a shift or a multishift brigade. In the latter case it joins together workers of all shifts of a given subdivision and the collectives of the shifts are transformed from brigades into teams while their leaders become team leaders. Depending on its composition, a brigade can be specialized, if it includes workers of only one specialty, or comprehensive, if it joins together workers of various specialties. Usually the more effective is organization that encompasses the entire collective of the shop or section but exceptions are also possible. The approach to selecting the forms of organization of the labor of the workers should be individual and take into account the specific conditions of the operation of the given enterprise.

The brigade can include engineering and technical personnel, for example foremen. At certain enterprises including them is regarded as a means of increasing the earnings of engineering and technical personnel, but the main goal should be to increase the effectiveness of the brigade's activity as a result of the dependency of the payment for the labor of engineering and technical personnel on the results of the brigade's work.

For example, in 1985 at the Ufimskiy grain products combine six brigades were created, including three multishift comprehensive brigades in the basic production—in the milling, groat, and mixed feed plants. Each brigade consists of four teams and works under a single contract, and the earnings are distributed taking into account the KTU and the quality of the labor. Each brigade includes four foremen, and the brigade rate per unit of output is determined taking their salaries into account. The team

leaders are the shift foremen, and the brigade leaders at the milling plant and the groats plant are millers, and at the mixed feed plant—a foreman.

There are nine brigades at the Sverdlovsk milling plant No 1 which is located in the neighboring region. In 1984 they created here a multishift comprehensive brigade of workers of the technical shop working under a single contract with distribution of earnings according to the KTU. Engineering and technical personnel were not included in it since, in the opinion of the plant administration, the labor of the brigade workers was organized well enough, and the earnings of foremen are higher than those of workers even if they are not included in the brigade.

The forms of organization of the labor of workers of service and auxiliary productions are more diverse. For example, loading and unloading work can be conducted by one brigade from a loading and unloading section or by several brigades specialized in their own productions, and sometimes it is expedient to combine these small brigades with collectives of the main shops toward which they are oriented and to carry out the entire work cycle, from the unloading of the raw and processed materials to the processing and dispatching of the products to the consumers, through the forces of a combined comprehensive brigade. Thus at the Ufimskiy grain products combine a multishift comprehensive brigade was created for the elevator, and comprehensive brigades were created at the warehouse for the prepared products and the repair and machine section. Foremen are no longer included in these brigades. At the Sverdlovsk milling plant No 1 the brigades of the elevator and the railroad section are also comprehensive and multishift brigades, but, in addition, there are four shift specialized brigades of loaders in jobs involving cargoes in containers and two shift specialized brigades of loaders for unloading grain.

But work under a single contract and distribution of earnings according to the KTU still do not justify calling a brigade a cost accounting or contract brigade, even if it is a multishift, comprehensive brigade.

The cost accounting brigade. The main task of brigade cost accounting is to increase the effectiveness of the utilization of raw material, fuel and energy, and other material resources. Therefore the main distinction of cost accounting brigades is the organization of bonuses for economizing on resources and material responsibility for overexpenditure of them. Another sign of cost accounting brigades of a high level of maturity is their inclusion in the system for submitting cost accounting complaints for failure to meet their commitments or failure to meet them by the established deadlines. The payment for the labor of a cost accounting brigade is the same as for an ordinary one, including with respect to the utilization of the savings from the brigade wage fund.

At certain enterprises the distinguishing feature of cost accounting brigades is considered to be the planning and accounting for results of their work, and included among them are even brigades that have not organized bonuses for economizing on material and energy resources, not to mention a system of cost accounting complaints. For example, at the Ufimskiy grain products combine indicators are planned for production volume, product quality, and labor, and their account for their fulfillment. On this basis the brigades are included among cost accounting brigades although no bonuses are organized for economizing on resources, including electric energy. Such a definition of a cost accounting brigade is fundamentally incorrect.

The contract brigade. The concept of the contract brigade is more complicated. Strictly speaking, the contract means the relations between two fully independent organizations that are joined together only by a temporary contract for the performance of a particular job. And the commitments between them are regulated by civil, not labor legislation. Therefore for production brigades that are subdivisions of enterprises the concept of the contract is applied arbitrarily and is used according to tradition. The main content of the contract is maximum independence in performing the tasks that have been set.

The independence of the contract brigade is manifested both directly, in the possibility of selecting any concrete forms of organization of its work and determining the number of personnel necessary for this, and indirectly, in the assignment of the necessary equipment to it as well as the evaluation of its activity not in terms of intermediate results, but according to final, long-term results.

The distinguishing feature of the contract brigade in the area of payment for labor is the guarantee of the receipt of the overall sum of earnings, which is paid for the performance of the stipulated volume of work within the given time periods and with the required quality, regardless of the number of personnel. For example, in such a brigade all the earnings of absent workers are distributed. But with the existing policy, at enterprises of the USSR Ministry of Grain Products it is permitted to distribute in any brigade the entire planned wage fund calculated for a fully staffed brigade, that is, to use all the savings obtained as a result of the release of personnel or their temporary absence. And this distribution is used in practice. Consequently, many production brigades have taken advantage of the rights of contract brigades, and the administrations of the enterprises should make the changeover of the brigade to the contract official according to the established policy, that is, they should hold brigade meetings, conclude contractual agreements with them, obtain the consent of the trade union committee, and publish an order to the effect that the brigade has been changed over to the contract.

There is no longer any need for this since the managers of associations and enterprises have been given the right, with the agreement of the trade union committees, to

introduce additional payments for combining occupations (positions), expanding service zones, or increasing the volume of work performed without limiting the list of combined professions or the amounts of additional payments to the savings on the wage fund formed according to the wage rates (salaries) of workers who have been released. Thus any subdivisions of enterprises are on an equal footing with contract subdivisions with respect to the mode of payment for labor.

Now the differences in the payment for labor of the contract and noncontract brigades are purely formal. In the former the savings on the wage fund is distributed directly among members of the brigade and in the latter that same sum of savings is distributed indirectly, through the establishment of additional payments for increasing the volume of work, expanding the service zones, or combining occupations.

At enterprises of the USSR Ministry of Grain Products there are no actual contract brigades yet. One of the highest levels of development in the branch has been achieved by the brigade form of labor organization at the Ust-Labinsk elevator of the Krasnodar grain products administration. In the opinion of its developer, the chief of the elevator's planning division, the brigades created in its subdivisions are not contract brigades, but cost accounting brigades of the highest level of development. A system of material incentives for economizing on all kinds of resources is being developed as an experiment at the elevator: the brigades are paid bonuses in the amount of 40 percent of the reduction of the actual production costs and they bear material responsibility for above-plan expenditures on production.

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11772

DEMOGRAPHY

Population Center Chief Discusses Demographic Trends

18280037a Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 Jan 88 p 3

[Article by Dmitriy Ignatyevich Valentey, doctor of economic sciences, professor, head of Center for Study of Problems of Population of the Economics Faculty of MGU: "The Demographic Barometer"; first paragraph SOTSIALISTICHESKAYA INDUSTRIYA introduction]

[Excerpt] Recently data from demographic statistics have begun to be published more extensively, including statistics about the birth rate, death rate and life span.... A demographic summary prepared by the USSR State Committee for Statistics is being commented on today, at the request of our correspondent A. Lvov, by the

manager of the Center for Study of Problems of Demography of the economics department of MGU, doctor of economic sciences, Prof Dmitriy Ignatyevich Valenty.

Readers interested in questions of demography have possibly devoted attention to the publications concerning improvement of demographic indicators. Yes, certain improvements are in evidence.

I have the statistical data—columns of figures and various tables that are of undoubtedly interest for more than just the specialist. Many are gratifying and many cause us to think seriously. For example, during 1986-1987 on an annual average there were 200,000 fewer deaths than in 1984 and the death rate of able-bodied men from accidents decreased by 37 percent. The birth rate has decreased during the past 2 years. During this period 5.6 million children were born annually while in 1980 this figure was 4.9 million. The average life span of all the country's population has increased by an average of almost 2 years, and for men—by 2.6 years. We observed certain positive changes when considering the data of the natural growth of the population: the overall coefficient per 1,000 residents in 1986 was 10.2 as compared to 9.2 in 1970. A gratifying phenomenon.

But how stable are these tendencies? What are the prospects for the development of the demographic situation?

Data of the State Committee for Statistics show that the problem of demography remains crucial in spite of certain positive strides. True, the indicators of the birth rate, death rate and life span have improved as compared to data from the end of the 1970's and the beginning of the 1980's. But if one compares what has been achieved with the best indicators (say, the death rate was lowest of all in the 1960's and the beginning of the 1970's), the comparison will not look so bright. By the year 2000 unless there is a radical change, according to UN predictions, the proportion of population of the Soviet Union in the world will decrease to 5.1 percent as compared to 7.1 percent in 1950.

There remains an essential differentiation in the dynamics of the populations of individual regions. The population of Central Asia, Kazakhstan and Azerbaijan, comprising about 18 percent of the population of the USSR, now produces about 40 percent of the overall growth.

In the RSFSR, the Baltic republics and several others there is a fairly complicated demographic situation. It has become especially critical in the RSFSR, mainly in the Nonchernozem Zone. Here in the rural area the population is not replenishing itself even now and the reduction of the outflowing of the population to the cities that is to begin in the 1980's will not principally improve the situation. The reduction of the natural growth rates during 1959-1984 was reflected in the reduction of the share of the Russian Federation in the country's overall population.

In rural regions of Central Asia and the Transcaucasian area there is still a considerable surplus of able-bodied population with a low occupational and territorial mobility of the citizens of the indigenous nationalities.

The country still has a high level of child and male mortality. The minimum indicators of mortality of men by age group were observed in 1960-1965. After this in all age groups above 20 there was an increase in the death rate and, as a result, a reduction of the average life span. The difference in the average life spans of men and women is 9 years. True, this is somewhat less than it was before. The difference between these and the best indicators in the world for men is about 10 years and for women—8 years.

And also in terms of the level of child mortality (and this is one of the most important sociodemographic indicators) we are far behind the economically developed capitalist and socialist countries. Child mortality (up to 1 year) in the USSR is higher by a factor of 3-3.5 than it is in Japan and the Scandinavian countries. Each year 130,000-140,000 children under 1 year of age die here. In the USSR 3-3.5 percent of the children who are born do not live to the age of 5 while in the countries with the best indicators it is about 1 percent. The proportion of children born with various psychophysiological defects is increasing.

One must say that beginning in the 1970's the overall number of births began to increase—from 4.1 million to 5.6 million in 1986. The proportion of second and third births increased as well. All this in combination with a certain reduction of the intensiveness of the death rate and the growth of the lifespan led to an increase in the growth rates of the population of the country as a whole and of individual republics—the RSFSR, the Ukraine, and Belorussia.

The increase in the number of births is linked to the influence of comprehensive measures in the demographic policy introduced in 1981. But this is not all. A favorable age structure also had an effect—a factor which is transitory and temporary to a certain degree. Therefore in the future we can hardly expect that the increase in the number of births will continue at the current rates. Many years of effort will be required in order to increase the lifespan, to make the way of life of the population even more healthful, to improve nutrition, and to develop mass physical culture and sports. A positive role should also be played by such measures as extending partially paid leave to care for children up to 18 months and up to 2 years without pay, increasing the pregnancy leave, and also the number of paid days for caring for sick children.

As of today the number of divorces remains high: about a half-million a year (one divorce for every three marriages). Moreover, 500,000-600,000 children lose one of their parents, in the majority of cases the father, the

number of children born out of wedlock is increasing, and the proportion of people who deliberately do not enter into marriage is also increasing.

An intensive process of aging causes complicated economic and social consequences. The number of middle-aged and elderly people is increasing more rapidly than

all of the country's population is, thus from 1959 through 1987 the population of pension age increased by 76 percent while all the country's population increased by one-third.

11772

ORGANIZATION, PLANNING, MANAGEMENT

Competition, Contracts, Credit Will Stimulate Design work

18230005 Moscow *EKONOMICHESKAYA GAZETA* in
Russian No 8, Feb 88 p 16

[Article by A. F. Kamenev, First Deputy Chairman of
the Machinebuilding Bureau of the USSR Council of
Ministers: "Wake Up the Talents"]

[Text] In our country, engineers and technicians make up about half of the specialists employed in the national economy. About two million people are directly associated with creative engineering activity, working in the plant-science sector and in independent scientific-research, design-development and technological organizations. More than 650,000 scientific workers comprise the share that are working on science in branches of the economy. In the country's machinebuilding complex alone, about two million rubles are spent annually on scientific research and experimental design.

The question arises: why does our production not have an excess of developments above the world level?

How the Producer Has Dictated the Situation

The main cause lies in the economic independence of the producers of industrial output from customers, which for long years has not only led to their imposition of an "antieconomic" situation on our domestic market but has also occasioned a gradual reduction in the requirements for technical improvement and a lowering of the level of economic feasibility of industrial articles at the stages of production and consumption. In many branches of industry, primarily in machinebuilding, what was encouraged secretly for many years was not the creation of output higher than the world level, but, in the best case, the reproduction and approximate copying of foreign models.

Until recently, upkeep of the collectives of NII's [scientific-research institutes] and KB's [design bureaus] as a whole was financed, not the subject matter of their operations, which were oriented to the achievement of a concrete result. This weakened the feeling of responsibility for a high level of development and shaped a psychology of egalitarianism in pay and incentives for engineering work. The absence of competitions in the design of industrial output caused a monopolistic situation for many scientific and design organizations and stagnation of the workers' creative activity.

Gradually, development of the test and experimental base for NII's and KB's stopped. Only a third of the organizations have one, and half of that capacity is not being used for the intended purpose.

This whole mutually connected chain of unfavorable factors against a background of world trends toward continuous complication of equipment and increase in the productivity and speed of machinery and mechanisms reduced the potential of branch-of-industry science for creating highly effective innovation. And the main thing is that researchers, designers and manufacturing engineers ceased to have a feeling of membership in a leading professional group of workers, which was called upon to be on the cutting edge in solving tasks of scientific and technical progress.

Tasks at the Boundaries of the Possible

Of course, there are many examples where collectives of our developers have created and are creating equipment that rises above the world's best counterparts. These are installations for continuous casting of ingots in metallurgical production, welding and cryogenic equipment, rotary and rotary conveyor lines, installations for grinding and crushing ores, and many others.

Collectives that have managed to establish and develop their own scientific and engineering schools create such equipment. In charge of them are great leaders, prominent personalities surrounded by comrades in arms and kindred spirits. They are able to face strenuous tasks, at times to the limits of the possible. It is precisely complicated problems that force specialists to concentrate their efforts to the maximum and to stimulate their best creative elements. Such collectives are at times able to create something unusual, something better than is created anywhere else out of ordinary materials and under ordinary circumstances.

Unfortunately, it must be said frankly that the work experience of the best collectives, whose developments have signified achievements higher than world levels, until now have not been studied or generalized either by workers of GKNT [State Committee for Science and Technology] or by managers of collectives, or by scientist specialists in management, economics, sociology and the science of science. The profound causes of the not-so-simple processes of using the human factor, which we must put at the service of scientific and technical progress as soon as possible, have not been bared.

The new economic mechanism, the conversion of scientific and design organizations to full economic accountability and self-financing, undoubtedly will lend a powerful impulse to a prodding of the creative potential of scientific collectives. However, what should be done so that each collective will set for itself tasks that are at the limits of the possible? This is the main question.

A Sharp Shift in Mindsets Is Needed

These days, innovations above the world level that are quickly put into production determine the success of the matter.

What are the prerequisites for this? Usually, in answer to this question, it is said that specialists should possess the necessary knowledge and experience, and laboratories and KB's should be equipped with the most modern equipment and test benches. All these, undoubtedly, are important and necessary. But **today a restructuring of the attitudes of the creators of innovations, a radical shift in mindset, is moving up to first priority**, for the guarantee of realization of the achievements of scientific and technical progress is the lively creativity of scientists, engineers, workers and organizers of production. In the final analysis, the conversion of science to full economic accountability and self-financing is aimed at this.

Party and government give a deep appraisal to the state of affairs in the sphere of research and development, and the role and tasks of academic, vuuz and branch-of-the-economy science have been determined. The indicators of scientific and technical progress of a branch of industry have now become the basis of the state plan, and tasks on assimilating new technology are set in in-kind indicators.

A number of major solutions for raising the effectiveness of branch-of-industry science and for improving the organization of and salaries for engineers and technicians, as well as improving equipment support for the creators of innovations, have been adopted.

At the same time, the measures for energizing the engineering body that have been planned are being realized in practice intolerably slowly.

Unfortunately, many supervisors and organizers of production still have not abandoned the stereotypical thinking that was formed long ago, when all attention was given to the **production stage**, and to quantitative indicators of production output. Meanwhile, it is perfectly obvious that if we are not able to reach and surpass the highest world level for new machinery and materials at the **stages of research, development and testing**, then it will be impossible to fill in this gap at the production stage, because capital expenditures for creating and perfecting equipment today are already commensurable with production costs.

The restructuring process which has begun in the sphere of research and development is suffused with contradictions, the clash of opinions of enthusiasts and skeptics, particularly in reference to stimuli for creating the first-class innovations that are relied on in the matter of reequipping the national economy.

During the current five-year plan, finally, strenuous tasks for achieving the world's highest level when creating and producing new output have been assigned to associations, enterprises and organizations. The main actor and interested person here is the customer. He now not only finances developments but bears equal responsibility with the developer for the level and promise of the technical parameters established for newly created

equipment, technology and materials. This qualitatively different task sharpens questions of evaluating authentically the technical level of developments and of industrial output, the quality of outfitting articles and materials, and the equipping of NIP's and KB's and their experimental bases with modern equipment and instruments. Right now, as in the case of machinebuilding articles, the question of assessing conformity of the level of structural materials and outfitting articles with the world's highest achievements has been posed uncompromisingly. Special commissions are readying a systematic solution to this problem on a state-wide scale. In brief, the tasks are becoming complicated. However, this should in no way confuse anyone. If such problems intensify, that means that solutions will be found.

That is why it is important right now to **promote the activeness of specialists, to make engineering creativity a matter of honor and of heroism**. Talents must be awakened, and the social prestige of people who can produce solutions of extrahigh class, other conditions being equal, must be raised. What will we find along this path?

Competition, Agreement and Credit

First experience indicates that it has now become necessary to promote competitive developments over a broad front with the solution of a whole complex of tasks, including those of ergonomics and industrial design. Of course, doing work simultaneously in several collectives at the start of a controversy is a fairly expensive matter. But funds for contests can be found, reducing unreliable and secondary work. Indeed, today less than half of the projects of the branch's science ends in the creation of specific machines and technologies.

It was precisely on a contest basis that blind solutions were found for the creation of a new subway train and the engine for the Moskvich motor vehicle, and right now a creative struggle is going on for a better solution for an integrated tractor, a power-engineering module for feed production, and a cabin for passenger elevators. Contests have been announced and are being readied in a number of other areas. They will be published in the press.

Now we must go farther. The time has come to convert to a contractual system for hiring scientists, engineers and technicians during the period of preparing developments, which should be concluded by tests and the decisions of an interagency commission about the recommendation for production. Forming the collective must be entrusted to the manager of the project. The one who turns out not to have been invited into such creative groups could obtain temporarily a minimum of wages, striving to find his place, to prove his importance to the scientific collective. This can, of course, aggravate mutual relations in the collective somewhat, and, speaking more precisely, overcome the atmosphere of complacency therein and of peaceful coexistence with idlers,

and develop contentiousness. These also are those healthy active beginnings, without which it is difficult to rouse the masses to restructuring and acceleration.

The new management methods will enable the financing of scientific research and design development to be tied in more closely with the results thereof. But we must go farther. It is desirable to convert to payment for completed operations and to the financing of various stages of research, and to use contractual advances and credits from USSR Gosbank. As for questions of payment for a specific creative contribution, then the Statute on the State Enterprise (or Association) grants all the opportunities to provide economic incentives for the collective and for each worker to achieve the highest results.

Make Creativity Universal

We must be concerned about the development of technical creativity on a large scale, about forming and developing creative capabilities on the part of pupils and students—the future's engineers and technicians. The necessary decisions in this area have been adopted by government, but matters are going slowly. Self-starting technical creativity of the people is needed right now, as always, for support. Managers of plants which have business with technology must create "departments for independent technical creativity." Providing them with the necessary resources and people responsible for organizing matters is not so burdensome for any industrial enterprise.

Youth, burning with the desire to build independently that same delta-winged glider, motor unit or skimming boat will go willingly into such a department. The creators could then acquire such an odd item for collective or personal use on legal bases at prices that consider the contribution of their labor. But do not search for roundabout and improper paths for this purpose, as still happens often. And how many promising developments can be engendered, given proper organization of independent technical creativity!

The time has come, in our view, to restructure also the invention activity. Exactness in originality and effectiveness of solutions must be raised; many of these which are recognized today as inventions under formal criteria actually do not go beyond the framework of ordinary innovators' suggestions. Indeed this is a business wherein many thousands of inventors have a hundred or more patents, but their significance is not great! They are poorly introduced, and because of this the originators consider themselves "unrecognized"; they begin to write complaints that are exhausting for everyone, in the investigation of which more masses of specialists are involved.

But inventors' developments that are actually effective and promising should be guaranteed timely realization in the national economy. The CPSU Central Committee

and USSR Council of Ministers decree that was dedicated to accelerated development of machinebuilding, which was adopted back in 1985, had a procedure for the approval of promising inventions in special centers. A decree was worked out about them. But the matter has never budged to date. Yet life requires an active mechanism under which the actual inventor may be transformed from a "messenger" into an active participant in the realization of his inventions. The selection and approval of them also must be conducted on a competitive basis, identifying prospective enterprises that are working under full economic accountability and self-financing, which undoubtedly soon will be chasing after the inventors...

Life itself now dictates the necessity for radical changes in the technical creativity of the masses. I would like to think that the recently created USSR Union of Scientific and Engineering Societies and the All-Union Society of Inventors and Innovators will dispense with the archaic paperwork methods of operation that are still characteristic of many public scientific and technical organizations, and aim their efforts under the new economic situation at a lively matter.

Fulfillment of the grandiose plan for economic and social transformations planned by the party depends upon restructuring in the sphere of the technical creativity of the masses.

11409

Machinebuilders' Conference Emphasizes Sector's Importance

18230013 [Editorial Report] Moscow VFSTNIK MASHINOSTROYENIYE in Russian Number 2, February 1988 carries on pages 3-4 a 1400-word article on the 9th Congress of the All-Union Scientific-Technical Society of Machinebuilders, held in November of 1987. The article describes the emphasis given in speeches and reports to scientific-technical progress in the machinebuilding sector. Speakers at the conference called for restructuring the machinebuilding complex, developing new generations of machines and instruments equal to the world level and general "brainstorming" using all the methods at their disposal.

More specifically, progressive methods such as automated test stands were stressed, as well as the need for resource and labor-saving technologies. "In connection with this," the article states, "the role of replacing the cutting process with other forming methods and introducing methods of nonoxidizing heating of metals and other progressive technologies is growing." The conference attendees were reminded: "Comrade M.S. Gorbachev has devoted attention to the need to increase the tempo of development of toolbuilding, electrotechnology and the electronization of equipment." In addition, as one speaker noted, "in the final analysis machinebuilding is the basis of a swift renovation of the country's

production apparatus, a materialization of scientific ideas and the achievement of high and stable rates of growth of the national economy.

PRODUCTION

Creation of Metallurgical Mini-Plants Suggested *18230018 Moscow IZVESTIYA in Russian 6 Apr 88 p 2*

[Article by IZVESTIYA scientific observer V. Konovakov: "The Allies of Giants"]

[Text] Metallurgical mini and micro-plants can provide a great benefit.

We have become accustomed to metallurgical giants like Magnitogorsk, which produce 10-15 million tons of metal a year. But this metal basically comes out in a form which is convenient for the producer, but not for the consumer. Then it turns out that machinebuilding enterprises file it into shavings like no one's business. From 30-70 percent of the metal now goes into shavings—into waste. They gather it up, press it, and ship it out again to "hell's back acre." But it's possible not to ship it, but to remelt it right there and get the blanks which the enterprises need, and which require minimal machine milling.

Abroad they have a number of such mini-plants with a capacity of 10-200 thousand tons of yearly production, working with the scrap metal and "wastes" of basic production. They have developed a network of service centers for reprocessing the production of metallurgical enterprises in a form necessary for the machinebuilders. We have practically nothing of this sort. Only recently the first service-type center under the Ukrainian Gosnab appeared. This "Metallomashprom" center was subordinated to Kiev in Kalinovka for servicing the machinebuilding enterprises of the Kiev region. But this is a drop in the bucket for our country.

The Kiev Institute of Electric Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences supports the creation in the country of a broad network of mini and even micro-plants, capable of serving large machinebuilding enterprises or whole regions. The scientists think that such a plant should have an electro-smelting furnace, a machine for horizontal metal casting, and installations for chill and centrifugal electroslag casting, which makes it possible to produce cast blanks of any form, requiring practically no machine milling.

Electrosmelting furnaces of various capacities are series produced by the Ministry of the Electrotechnical Industry and to set up the output of specialized steel smelting aggregates would not be complicated.

The situation is much worse regarding horizontal machines for continuous casting of blanks (GMNLZ). The first GMNLZ's in the world appeared in our country. Their creator was the Kharkov Ukrainian Scientific

Research Institute of Metals. The license for the GMNLZ was sold to the Italian firm [D'Anchelli] which developed on its basis a large-scale world class product. We have only one single GMNLZ for steel casting working, and not at full strength, at the Karaganda Metallurgical Combine. They are used, it is true, for casting iron and nonferrous metals. But these are also isolated examples. There is still not one machine for casting steel at machinebuilding plants.

From these various types of wastes and scrap metal they would be able to cast the so-called consumable electrodes, needed for electroslag casting installations. This tendency, born 30 years ago at the Electric Welding Institute, makes it possible to achieve metal of a high quality. On the basis of electroslag crucible smelting of metal, compact domestic installations were created several years ago, which make it possible to achieve any casting profile of the most complicated forms. The Ministry of the Machine Tool and Tool Building Industry has set up production of them in a limited quantity. Many foreign firms now want to buy them.

These installations, active in the Engineering Center of Electroslag Technology in the Experimental Plant for Special Metallurgy at the Electric Welding Institute, are overloaded with orders. This is despite the fact that experimental production and products are expensive here. Nonetheless this is convenient for many enterprises because they have not been able to get the necessary rolled metal and forged pieces for years. Many enterprises throughout the country have become customers of the Kiev Engineering Center. And "handicraft" production has changed into industrial production.

With all our inclination toward gigantomania, it is finally time to realize that it is not always economically beneficial. Apparently, the USSR Council of Ministers Bureau for Machinebuilding and USSR Gosplan have to review the question of creating metallurgical mini-plants. Of course, their specific outfitting may not be that which the Kiev scientists suggest. But now, under the conditions of the changeover to khraschet and resource saving technology, there is no doubt that these plants are a vital necessity for our country.

New Machines Exhibited at VDNKh

18230003 [Editorial Report] Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian for 9 January 1988 carries on page 1 a 1000-word article by TASS correspondents A. Belikov and V. Grishchenko entitled "To the Maximum," which describes an exhibit of new machines at the Moscow VDNKh [Exhibition of Achievements of the National Economy]. The article states that 2,500 machines were exhibited and that all of them had been manufactured in the period since the 1985 April plenum. The article states that "You will not see here narrowly departmental approaches which would describe the achievements of only an individual sector. Life itself has decisively broken down these barriers and

the entire machinebuilding complex of the country...is oriented toward high final results." The authors also discuss the upcoming tasks of the machine builders, including the use of electronics in creating new machines. In the era of *perestroika*, they go on to say, machinebuilding must orient itself to achieve levels of the best world models. The participation of the CEMA countries in these efforts is also necessary. "Machine-builders are calculating their efforts and reserves for acceleration." Belikov and Grishchenko write, and are taking into account "the adopted program of modernization of machinebuilding...a key sector of the national economy."

TECHNOLOGY, ACQUISITION, ASSIMILATION, COOPERATION

CEMA-Member Countries' Machinebuilding Priorities Listed

18230004 Moscow *EKONOMICHESKOYE
STRUDNICHESTVO STRAN-CHLENOV SEV* in
Russian No 11, 1987 pp 55-63

[Article by Ladislav Rzhiga, chairman of the Czech Statistical Directorate: "Acceleration of Scientific-Technical Progress"]

[Excerpt] In the Soviet Union great attention is being devoted to the timely and qualitative fulfillment of the tasks of the Comprehensive Program for Scientific-Technical Progress. They are reflected in the state plans. Specific measures have been defined, which the USSR ministries and departments and leading organizations are supposed to implement. The understandings, strengthened in the Comprehensive Program of Scientific-Technical Progress and the resolutions of the CEMA session (the 41st extraordinary session) are intended as the basis for the practical activity of the ministries and departments in accelerating scientific-technical progress and for economic, scientific-technical and industrial collaboration with other countries of the socialist community, based on specialization and cooperation.

Special sections are being foressen for ensuring work throughout the whole cycle (scientific research-series production) with the necessary resource in the 5-year and annual plans of economic and social development of the USSR.

The understanding of the CEMA-member countries on agreed-upon actions in developing and using principally new types of equipment and technology through a conceontration of efforts and organization of close comprehensive collaboration lies at the basis of realizing the Comprehensive Plan. In connection with this, the leading organizations and their co-executors face the task not only of creating separate models, but systems of machines, equipment and instruments. These should answer the demands of power-engineering, information, meteorological, design and use compatibility, and ensure the possibility of forming various systems based

on a limited aggregate of unified blocs, modules, components and parts. This will serve as the prerequisite for large-scale production cooperation.

Broad use of the latest achievements of science and technology (including microelectronics, fiber optics, laser equipment, etc.) stimulates an increase in the nomenclature of machinebuilding products and a rationalization of production which requires definite borders. In connection with this, the agreed-upon actions of the countries of the socialist community on standardizing and unifying manufactured goods, establishing rational numbers and long-range parameters become highly urgent. A direct consequence of this is the need for closer interaction not only of the technical and production, but also the scientific potential of our countries.

An importaont question for the USSR is the change from the inefficient structure of foreign trade exchange with the fraternal countries. In conjunction with the restructuring of the USSR's foreign economic ties with the European socialist states, a reorientation of their specializations primarily toward the manufacture of non-metal intensive but science-intensive types of modern equipment is necessary. The import of machines and equipment from these countries for technical re-equipping and reconstruction of Soviet enterprises should be implemented primarily as deliveries of complete sets. In addition, in the forthcoming period cooperation between the USSR and the CEMA-member countries should be broadened, and directed toward decreasing or stopping the import of separate types of machines and equipment from capitalist states. Attention will be concentrated on mastering production of modern, highly productive equipment previously acquired from these countries, including on the basis of agreements with the fraternal countries or, the purchase of licences and the organization of joint enterprises.

Our countries face the task of increasing the technical level and quality of mutually delivered products on the basis of further improving mutual scientific-technical collaboration, strengthening its mutual ties with production and its outstripping development of normative-technical guarantees. It is intended to restructure the system of international specialization and production cooperation.

Special attention will be devoted to the development of large-scale forms of cooperative interaction, on the basis of forming international production and scientific-production complexes in the fraternal countries for organizing large and efficient production and creation of export potential for entry into the market of the developed capitalist states. A significant growth of the efficiency of sectoral collaboration is planned for the long run, which should be based on the fraternal countries agreement for programs of long-term development and optimally combined interest of the existing country profiles.

Bulgaria: Hoisting-transport and agricultural machine and tool building, computer hardware, special technological equipment for the electronics industry.

Hungary: Buses, instrument building, medical equipment, computer hardware and communications, equipment for the service sphere, special technological and control-measuring equipment for the electronics industry.

GDR: Metallurgical and mining equipment, chemical and printing machinebuilding, tool, robot and shipbuilding, optics and articles of electronic engineering, computer hardware, light and food industry machine building, special technological equipment for the electronics industry, isothermics and railroad passenger cars.

Poland: Mining machinebuilding, equipment for the textile and food industry, construction-road building machines, tractors and light automobiles, shipbuilding.

Romania: Equipment for oil and gas extraction, freight and postal railroad cars.

Czechoslovakia: Tool building, small and large freight-handling trucks, diesel and electric locomotive building, power, atomic and metallurgical equipment, equipment for the light and food industry, articles of electronic engineering and special technological equipment for the electronics industry.

The improvement and development of the USSR's foreign economic ties will consist of:

Wide-scale comprehensive automatization of sectors of the national economy, full reequipping of the machinebuilding production base, introduction of leading technology;

Increased productivity of social labor;

Output of all machinebuilding products on a world technical level;

Essential strengthening of the technical-economic independence of the countries of the socialist community from imports from the capitalist countries;

Restructuring non-efficient structures of new progressive forms of collaboration, broadening and deepening production specialization and cooperation, significant growth of mutual deliveries of full sets of components and parts;

Guarantee of machine-building products on the basis of requirements of the most important sections of the economy.

Deepening and improving the collaboration of the CEMA-member countries in radical transformation of the economies of their countries will have a deep influence on all spheres of life and social activity, and will lead to a cardinal increase in labor productivity in the basic sectors of the national economy (first of all machinebuilding) and to the reliability, quality and competitiveness of the products produced and an increase in yield on capital. It will sharply decrease manual and low-skilled labor and will raise the general technological level and efficiency of production.

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AUTOMATION, AUTOMATED SYSTEMS

Economic Viability of Automated Plants Defended

18230010 [Editorial Report] Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian for 13 February 1988 carries on pages 1 and 2 an 1100-word article entitled "Automated Plant of the 21st Century." The beginning of the article is an announcement of a competition, sponsored by the USSR Ministry of the Tool Industry, for the best "conception" (no design or blueprint required) of a flexible automated plant. Entries are due by 20 March. More information on the contest can be obtained from ENIIMS [Experimental Scientific-Research Institute of Metalcutting Tools].

The remainder of the article is an interview conducted by L. Skoptsov, SOTSIALISTICHESKAYA INDUSTRIYA correspondent, with Yu. G. Kozyrev, chief of the department of automation at the USSR State Committee for Science and Technology. Skoptsov asks what need exists for an automated plant, reminding Kozyrev about the high hopes for innovations such as robots and flexible manufacturing systems [FMS], all of which resulted in losses. Kozyrev replies: "Was that the fault of the robots? The problem was with the distribution policy of the ministries, with wage levelling. Remember, in 1973 the Ministry of the Aviation Industry manufactured the first 150 robots and gave one to each plant, so that no one would be left out. Where are these robots now?...For almost two dozen years there has been no output from tools with programmed control because we did not have them concentrated in special sections. Or take FMS. The plants received them as a gift, via the centralized funds account. Therefore they were installed not where they would have the greatest output, but in the 'bottlenecks', so they patched up the holes with a poor organization of labor.

"In other words, to fit new equipment into an old production infrastructure is wasteful. It is necessary to automate the whole production cycle, from design to sale, then we will receive the accumulated effect. The ENIIMS automated plant was really a miracle of technology—at the entrance, metal ingots and at the exit

3500 already boxed pistons per day. All without the interference of a man, and the plant worked like a clock. But it existed only as long as the pistons of this particular type were needed. The product mix changed and the plant was scrapped. Rigid, although highly productive automated lines do not justify themselves economically.

"The concentration of FMS, computers and robots in one automated plant—that is what we need. If one compares it with the usual production, today it would be possible to decrease the labor intensity of machining parts to 1/5 of its present amount, to cut personnel to 1/3 of the present number, to sharply decrease the machine-tool park and lower the cost of production. But the main thing is that production will become multi-product but small series, and the production cost of manufactured goods will be almost the same as under mass production. A three-fivefold increase in labor productivity—isn't this an economic victory?"

Lithuanian Plant Experiences Difficulties in Using FMS

18230002 [Editorial Report] Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian for 29 December 1987 carries on page 1 a 1400-word article by V. Vasileva and R. Motskus entitled "Proving Ground Where Mistakes Circulate." The authors describe the problems occurring in the FMS [Flexible Manufacturing System] at the Vilnius 'Zhalgiris' plant. In the first part of the article, the authors ask A. Fedorov, chief of the planning-economic department of the plant, how the creation of the FMS is affecting the economy of the plant. Fedorov replies that the "calculations have not been done." He goes on to explain that the ministry [not identified] viewed the installation of the FMS as "experimental" but no single organization had prime

responsibility for the project. In addition, as Vasileva and Motskus report, the FMS system was introduced all at once and worked in parallel with the still existing old machines. Although the FMS has been in place for a year, the plant does not yet know what the final results will be. The problems stem, according to the article, from the desire to create the FMS "at any cost." The authors conclude that "the main problem is to ensure that, unlike Zhargilis, the consumer does not deal with a dozen inventors, among whom no one bears the responsibility.... Coordination of efforts of developers and specialization in manufacturing components [for the FMS] is also a way to an economical FMS. And it is necessary to turn to this as soon as possible."

ROBOTICS

Robots That Learn, "Think" Exhibited

18230001 [Editorial Report] Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian for 20 December 1987 carries on page 1 a 600-word article by V. Lagovskiy entitled "What do Robots Think About?" Lagovskiy describes an exhibit of second-generation robots held at Moscow's VDNKh [Exhibition of Achievements of the National Economy]. The new robots have been designed, Lagovskiy writes, to be able to adapt themselves to new tasks. In a sense, they are able to "think," and have flexible programs which allow them to perform complex tasks. A demonstration was given in which a robot was able to stack pieces in a pyramid, according to size. Scientists from the Institute of Applied Mathematics imeni M.V. Keldysh and the Institute of Atomic Energy imeni V.M. Kurchatov were involved in the design and creation of these new robots.

11772

CIVIL AVIATION

Civil Aviation Officials Answer Criticism
18290064b Moscow *IZVESTIYA* in Russian 26 Dec 87 p 1

[Article by V. Belikov: "Aeroflot: Will We Be Able to Depart on Time?"]

*[Text] These days the editorial phone and reception office of *IZVESTIYA* are literally being attacked by people who were unable to leave on time for the Far North and the Far East, Siberia and even southern routes. What has happened to air transport at the end of the year?*

There was a discussion concerning this at a press-conference at the Ministry of Civil Aviation in which MGA [Ministry of Civil Aviation] Minister and collegium member A. Volkov took part.

"Never before," noted the minister, "has civil aviation transported so many passengers as in the year just concluding—119 million—of which some 4 million were on international routes. The demand of the population for air transport, however, was not completely satisfied. About 15 percent of those wishing to leave on a trip by air were unable to get tickets ahead of time and had to wait in lines for massive amounts of time.

"The chief cause of this was the now-chronic shortage of aviation fuel, which is depriving us of the opportunity of introducing additional flights on needed routes. The situation is sometimes aggravated by the fact that the regularity of flights is declining, as especially occurred last year. This is explained by foul weather, prolonged fog and, last but not least, the poor equipping of many domestic airports with modern navigational equipment.

"The workers of Aeroflot, in conjunction with the specialists of the aviation industry and other sectors of the national economy," said A. Volkov, "will make every effort to see that the requirements of the Soviet people and the national economy for air transport are met to the maximum possible amount. We place great hopes on the arrival of new types of aircraft for which design development is currently underway. The solution of the acute problems of Aeroflot depends largely on how quickly the new airliners arrive at the airports."

Answering a question from an *IZVESTIYA* correspondent on rectifying the situation that has taken shape with passenger departures from Moscow in the near future, First Deputy Minister B. Panyukov reported: "We are making use of every additional opportunity and all reserves of aviation fuel so as to make possible first and foremost the departure of residents of the Far East, Far North, Chukotka and Kamchatka—those regions that have no other connections than by air. Next year it has been proposed to add about four thousand flights on

those routes to the Aeroflot schedule through a redistribution of aircraft and fuel from other regions of the country and the better provision of ground forms of transport."

"When can we expect that the purchase of an airline ticket will take a few minutes rather than hours or even days?"

"That opportunity obviously will not appear for all who wish to be airline passengers before the implementation of the Aeroflot Development Program to the Year 2000 begins."

12821

Tu-134 Engine Fire During Takeoff
18290064c Frunze *SOVETSKAYA KIRGIZIYA* in Russian 3 Jan 88 p 1

[News item from Kirgiz News Agency correspondent A. Kim, Frunze: "A Hundred and Two Seconds of Courage"]

[Text] The precise actions of specialists required a hundred and two seconds to extinguish a fire on a Tu-134 aircraft and save all of its passengers.

The Frunze-Osh flight had started as usual and foretold no surprises. Gathering speed, the aircraft prepared to take off from the runway. The speedometer read 256 kilometers an hour. And suddenly an emergency signal went into action—the aircraft's left engine had caught fire. In the extreme situation that took shape, the crew chose the sole correct solution. The takeoff was aborted and the aircraft brakes were applied, while the air-traffic-control dispatcher was notified of what had happened. After the stop the emergency hatches were opened and inflatable gangways were deployed.

The members of the crew and the flight attendants calmed the passengers in the cabin and began to take them out. The saviors themselves were the last to leave the aircraft. A minute and forty-two seconds had passed from the moment the fire broke out to the complete evacuation of the 76 people.

Here are the names of the members of the crew that displayed such self-possession, courage and lofty professional skills: crew commander Mikhail Ageyev, co-pilot Yuriy Glebov, navigator Albert Kantayev, flight engineer Vladimir Levchenko and flight attendants Tatyana Malofeyeva and Olga Kurganova.

12821

**RSFSR Deputy Highways Minister on
Construction Plans**
*18290030a Moscow AVTOMOBILNYYE DOROGI in
Russian No 10 Oct 87 pp 1-2*

[Article by A.A. Nadezhko, RSFSR deputy minister of Highways and V.A. Popov, chief of the Operations Administration of RSFSR Ministry of Highways: "Prospects for Development of a Highway Network in the RSFSR

[Text] The strategy for highway construction in the RSFSR, which continues to be carried out at the present time, was defined in the early 1970's. At that time, highway construction in the republic was in the developmental stage. Only 66 percent of the rayon centers and 45 percent of the central farmsteads of kolkhozes and sovkhozes throughout the republic had year-round connections with the state highway network. At the time, many territories in the European part of the RSFSR and all oblasts, krays and autonomous republics in the Urals, Siberia and the Far East lacked access to the country's center via modern type roads.

A question arose: how should the highway system be further developed? Perhaps the path to be followed should be that of developing and improving the country's main roads, leaving the local network without hard and improved surfaces for many years. Or should local roads be built, while thus postponing improvements in the state and republic roads for 15-20 years, but maintaining them during these years in satisfactory condition and modernizing the more highly used sectors in the vicinity of large cities?

Taking into account the fact that the poor condition of the local road network was restraining the development of agricultural production (a lack of good roads was the rule in rural areas), despite the fact that the support network although over-worked was still nevertheless operating, the decision was made to concentrate the road construction capabilities mainly on the construction of local roads and to resolve this problem over the next 3-4 five-year plans. This make it possible to raise the proportion of general purpose hard surface roads in the RSFSR from 22 to 80 percent and to ensure by the beginning of the 12th Five-Year Plan reliable lines of communication for 97 percent of the rayon centers and 87 percent of the central farmsteads of kolkhozes and sovkhozes, which promoted to a considerable degree the implementation of the country's Food Program. The plans call for this work to be completed mainly during the current five-year plan.

Economic analysis underscores the correctness of the decision that was undertaken and implemented. Over the past two five-year plans alone, the overall length of dirt roads has declined by a factor of 2.5. As a result, the losses in agricultural production caused by poor roads have been lowered by 0.7-1.0 billion rubles annually. In rural regions, where motor vehicle roads have undergone

substantial development, the production costs for freight shipments have declined by a factor of 2-5, withholdings for restoration and capital repair work on motor transport equipment have been reduced by up to 30 percent, an opportunity has appeared for using more economical motor vehicles with greater freight carrying capability and the requirements for scarce resources have been lowered.

In addition to the accelerated development of motor vehicle roads of local importance, RSFSR Minavtodor [Ministry of Highways] carried out improvements in the transport-operational condition of roads of oblast, republic and state importance. Over the past 15 years, the extent of the increase in hard surfaces on these roads by five-year plans increased respectively by 17,800, 9,100 and 8,500 kilometers. Considerable improvements took place with regard to raising the durability of the roads, with a substantial increase being noted in the proportion of roads having improved types of surfaces: roads of state importance — from 72 to 87.5 percent, republic importance — from 36 to 71 percent and roads of oblast importance — from 21 to 57.5 percent. At the present time, one fifth or more than 100,000 kilometers of road are classified as being in the first through the third categories of road surfaces.

As of 1 January of this year, more than 95 percent of the support network of highways connecting all of the oblast (kray and ASSR) centers and also the larger industrial cities and also which provide access to Moscow, had improved surfaces.

The construction of important roads of considerable length has been completed: Moscow - Arkhangelsk, Gorkiy - Kirov, Kirov - Syktyvkar, Tyumen - Omsk, Moscow - Astrakhan and others. In addition, 46 bypasses of large cities have been completed and this will free these cities of the passage of transit motor vehicle transport operations. The proportion of bridges which are in a good state of capital repair has increased to 75 percent.

In raising the effectiveness of development of the road economy, great importance is being attached to the status of the logistical base, the production capabilities and to the level of the scientific-technical potential.

Despite definite achievements in the development of the republic's road economy, a need has developed at the present time for a change in the strategy for road development during the 12th and subsequent five-year plans.

Over the past 15 years, freight turnover by motor vehicle transport, as a result of increases in the number of vehicles and in their productivity, increased by a factor of 2.3 in the RSFSR and passenger transport (motor buses of general use) — by a factor of 2.4. This year motor vehicle transport is transporting more freight by a

factor of four than all other types of transport taken together and by the year 2005 freight and passenger turnover by motor vehicle transport will have increased by factors of 1.7 and 1.6 respectively compared to 1985. Understandably, motor vehicles can reach their full potential only when they are employed on good quality roads which permit maximum use of their potential capabilities, particularly speed and freight carrying capability.

The planned development of productive forces in the RSFSR and the related increase in intensity of movement will increase even more the gulf separating the level of motor vehicle shipments and the technical condition of the republic's chief network of motor vehicle roads and this will attach a greater degree of urgency to its restructuring.

In analyzing the average amounts of movement intensity and the work carried out by motor vehicle transport, compared to the principal indicators for development of the national economy of the RSFSR and the republic's highway network, the following conclusions can be drawn. The proportion of shipments associated with roads of high administrative importance is constantly increasing. As a result, roads of state importance are more over-loaded with movement and this requires accelerated rates for increasing their traffic carrying capabilities. The rates for the construction and modernization of motor vehicle roads, especially high category roads, are lagging behind the rates of growth for intensity of movements. As a result, the workloads of roads at the approaches to large cities are increasing. Computations have shown that if the maximum permissible workload for a road is taken as a unit, then for roads of state importance it amounts to 1.6 and for roads of republic importance — 1.04. Constituting less than 9 percent of the overall extent of the highway network, roads of state importance are carrying out more than one half of all passenger and freight movements in the RSFSR.

Among the roads of state importance, a special role is played by the principal high speed highways. A number of them are included in the international network. The intensity of movement along many sections of these main high speed highways exceeds the norm by a factor of 5-6 and this brings about premature wear and tear and reduces the safety of movement. These high speed highways are found for the most part in the European part of the RSFSR. Stable motor transport connections between regions of Siberia and the Far East are still lacking. Of the active sectors of the Trans-Siberian high speed highway, 4,500 kilometers still lack a good quality surface.

Here it bears mentioning that the existence of an improved type of surface is not of itself an absolute criterion for a high quality road network, since the majority of roads was created on the basis of technical conditions which existed earlier. These roads were intended for the passage of motor vehicles having axial workloads of up to 6 tons, the curve radiiuses and the

width of the highway portions were inadequate for modern conditions and they had many crossings at the same level with railroad and motor vehicle roads. Measures undertaken throughout the republic for the purpose of repairing such roads are making it possible merely to maintain them in operating condition, but they fail to raise their transport-operational status or traffic handling capability.

In the interest of the country's economic and social development and international tourism, a sharp need has developed at the present time for improving the network of motor vehicle roads and for adopting and implementing a program of urgent work aimed at improving the status of the republic's principal highways for the period up to the year 2000. In order to accomplish this, commencing with the 13th Five-Year Plan the predominant portion of the production capabilities of the highway construction organizations of USSR Mintransstroy [Ministry of Transport Construction and RSFSR Minavtodor must be directed towards the construction and modernization of the republic's main highways — roads of state importance and the opening up of international movement on them. This applies first of all to such main highways as Moscow -Chelyabinsk - Chita - Khabarovsk, Moscow - Rostov-na-Don, Moscow -Simferopol, Moscow - Leningrad, Moscow - Voronezh - Rostov-na-Don and others.

According to computations, it will be necessary first of all to build and modernize approximately 10,000 kilometers of highway surface, with approximately 10 billion rubles and appropriate logistical resources being made available for this purpose. Scientists estimate that the repayment of capital investments will take place over a period of 4-5 years, since the annual savings realization of the planned program will amount to more than 2.1 billion rubles (including a reduction of 1.6 billion rubles in production costs for the transporting of freight and passengers, less time required for transport operations — 0.4 billion rubles and a reduction in losses caused by highway-transport accidents — 0.1 billion rubles). This will also make it possible to save more than 400,000 tons of fuel and lubricating materials annually. Obviously, the branches which realize the greatest results must bear the expenses for road construction.

By no means do the figures cited reflect fully the results realized, since it is impossible to determine, from the standpoint of value, the favorable results generated by newly built or newly modernized highways (or the entire road network) upon the work of public health, national education, municipal, trade and cultural-domestic services systems, upon the operational effectiveness of enterprises and organizations of all national economic branches and also upon the country's prestige on the whole.

The completion of this construction work and consistent modernization to the required parameters for all roads of state, republic and oblast-importance must be viewed as

the next stages in order to ensure that the country's highway problem is fully resolved by the first decade of the 20th century.

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RAIL SYSTEMS

Minister Gives Details on Restructuring, Mergers
18290073 Moscow GUDOK in Russian 22 Jan 88
pp 1-2

[Report on an expanded session of the Ministry of Railways Collegium and the Rail Transport and Transport Construction Worker's Trade Union Central Committee Presidium; first six paragraphs are GUDOK introduction]

[Text] As GUDOK has already reported, an expanded session of the Ministry of Railways Collegium and the Rail Transport and Transport Construction Worker's Trade Union Central Committee Presidium, in which the chiefs of railroads, subways and territorial associations of industrial rail transport; the directors of scientific research institutes; the rectors of branch VUZ; the directors of a number of divisions, enterprises and organizations in the Ministry of Railways; scientists; foremost production workers; and the party and trade union aktiv participated, was held recently.

N. S. Konarev, minister of railways, presented a report entitled "On the Results of Rail Transport Work During 1987 and the Measures to Increase the Effectiveness of Its Activity Under the Conditions of Complete Cost Accounting, Self-Financing and the Restructuring of the Organizational Management Structure."

A. G. Andreyev, the chief of the Belorussian Railroad; N. A. Belogurov, the chief of the Central Asian Railroad; E. S. Poddavashkin, the chief of the Kuybyshev railroad; I. L. Paristy, the chief of the Moscow Railroad; Ye. S. Valkov, the chief of the Kemerovo Railroad; A. A. Alimov, the chief of the Dnepr Railroad; I. P. Vorobyev, the chief of the South Urals Railroad; V. M. Skvortsov, the chief of the Sverdlovsk Railroad; L. I. Matyukhin, the chief of the Gorkiy Railroad; F. M. Kotlyarenko, the chief of the North Caucasus Railroad; A. A. Zaytsev, the chief of the October Railroad; A. P. Ivanov, the chief of the Far Eastern Railroad; A. V. Chernomaz, chairman of the Donetsk rail transport worker's union; V. P. Gerasimov, chairman of the West Siberian rail transport worker's union; V. G. Inozentsev, rector of the Moscow transport VUZ and corresponding member of the USSR Academy of Sciences; P. S. Gruntov, rector of the Belorussian transport VUZ; O. P. Agoshko, deputy chief economist of the Kuybyshev Railroad; S. N. Zhuravlev, director of the economic department of the All-Union Scientific Research Institute of Railroad Transport; N. A. Astapenko, chief of the Ulan-Udenskiy Locomotive and Railcar Repair Plant; V. P. Belovodskiy, chief of the

Lyublinskiy Mechanical Foundry; A. Z. Borovik, chief of the Ussuriysk Refrigerator Depot; S. N. Usikov, train make-up man at the station of Bryansk-2; P. Ya. Krylov, electromechanic in the Severobaykalskaya Power Supply Division; V. F. Pryadko, chief of the Centralized Accounting and Finances Main Administration; N. S. Nikitin, chief of the Economic Main Administration; S. I. Solovyev, Ministry of Railways deputy minister and chief inspector for traffic safety; A. N. Bevzenko, first deputy minister; and I. A. Shinkevich, chairman of the Rail Transport and Transport Construction Worker's Trade Union Central Committee, spoke during the meeting. Other participants in the meeting also made proposals.

V. I. Dolgikh, candidate member of the CPSU Central Committee Politburo and secretary of the CPSU Central Committee, spoke during the meeting.

A branch council under the chairmanship of N. S. Konarev, minister of railways, was elected. GUDOK will discuss in detail the tasks and functions of the council.

Today, we are publishing a report on the expanded session of the Ministry of Railways Collegium and the trade union's Central Committee Presidium.

The Times Dictate

The expanded session of the Ministry of Railways Collegium and the trade union's Central Committee Presidium took place during a very important and critical period when the country and all of our people have begun the second stage of restructuring. The party has developed the concept of restructuring, and decisions on what must be done and how it must be done have been made. The task now consists of firmly and confidently moving along the selected road and consistently and persistently carrying out everything that has been planned, relying on the development of socialist democracy and resolutely sweeping aside the negative phenomena that accumulated during the years of stagnation.

Both the main speaker and those who spoke during the discussions emphasized that a qualitatively new stage began on 1 January in the work of rail transport. The railroads, main activity enterprises and organizations, territorial associations, industrial rail transport enterprises, plants, and all construction, scientific, research and design organizations in the branch have shifted to complete cost accounting and self-financing. The USSR Law on a State Enterprise (Association) has gone into effect. A general schedule for the administration of the branch has been introduced. The practical carrying out of a radical economic reform has begun. The process of renewal and restructuring and the new approach to solving complicated tasks have already had a positive effect on concrete economic matters. Although the past

year of 1987 began under extremely difficult conditions, railroad workers nevertheless completed it at a high level, having insured the fulfillment of the main planning tasks.

GUDOK discussed in detail the results of rail transport work during 1987 and since the beginning of the five-year plan in the survey that was published on 20 January.

The attention toward transport's modernization and technical re-equipping has been strengthened. Approximately 55 percent of capital investments have been directed towards these purposes. The quotas for commissioning primary production capacities have been realized.

Positive changes for the better have been outlined in the development of the social area. Approximately four million square meters of housing, preschool institutions with 18,000 places, hospitals with almost 4,000 beds, and many other social and everyday projects have been built during the two years. An important step has been taken to make the social area a primary plan one and to make a concern for people and their needs the primary work of economic directors and public organizations.

A Covering Detachment Against Losses

Rail workers heroically overcame difficulties during 1987. However, there were many important shortcomings in their work. First of all, they did not manage to achieve stability. The timely supply of railcars was frequently not assured and important freight was not removed. The Donetsk (Comrade Kozhushko is the chief), the Transcaucasian (Comrade Papava is the former chief of the railroad), the Dnepr (Comrade Alimov), the Volga (Comrade Chepotarev), the Kuybyshev (Comrade Poddavashkin), the West Siberian (Comrade Nikolayev), and the South Urals (Comrade Vorobyev) railroads arrived at the finish of the second year with large shipping debts.

Operating work was organized especially unsatisfactorily on the Volga, Transcaucasian and Transbaykal railroads. The movement schedule of freight trains was carried out at a low level. Almost one-third of the travel delays occur because of shortcomings in traffic organization and the operation of stations and as a result of uncoordinated actions between railroads and railroad divisions and the unsatisfactory operating work of neighboring subunits. A large number of train delays are tolerated at the junctions. Under the new management conditions, those guilty of this should be punished with rubles and bear full responsibility for the poor work.

Approximately 18 percent of train delays occur through the fault of the locomotive workers. The number of cases of damage to electric locomotives during a journey and of their being sent for non-planned repairs has grown.

Along with this, the speakers pointed out that obsolete electric and diesel locomotives are operating on a number of railroads. For example, VL22m locomotives that have served for more than three decades form more than two-thirds of the electric locomotive pool on the Sverdlovsk Railroad. The expenditures for their repair and current maintenance are enormous, but their writing off and replacement with new locomotives are occurring extremely slowly.

Quite a few delays in the dispatch and movement of trains occur as a result of the untimely and poor preparation of railcars for a trip. Daily, more than 630 railcars are uncoupled during a journey because of breakdowns in the slippage assemblies and brake and automatic coupling equipment and other deficiencies. Movement delays exceeded 560,000 train-hours. This lead to an additional operating expense of more than six million rubles. Approximately half of all the delays occur on five railroads — the South Urals, West Siberian, Kuybyshev, Gorkiy, and Moscow. The reason is a lack of a proprietary attitude toward railcars and passiveness in introducing advanced technology at the technical maintenance points.

Positive experience exists, especially on the October Railroad where they have allocated or constructed track at a number of stations and organized the routine repair of railcars based on advanced technology on them. The results are available — the number of railcar uncouplings has been reduced by almost 10 percent and by 20 percent at the PTO [technical maintenance points] of the largest station, Leningrad-Marshalling-Moscow. Dispatch delays of trains have practically been eliminated at this station. The improvement in the maintenance of the railcar pool is a matter that brooks no delay.

Transport is undergoing large losses because of the unsatisfactory condition of the track on many avenues. The network has 5,100 warnings about reducing speed on the average every day. Losses from train delays as a result of the poor condition of track facilities is estimated to be more than 11 million rubles. The main reasons are the failure to observe current maintenance and repair technologies and the lack of necessary monitoring of the track's condition. A staff of track linesmen and other workers in this area has not been formed on the railroads. There is a shortage of more than 3,000 people.

An acute shortage of switches is being felt. A total of 1,410 warnings occur because of their unsatisfactory condition. Comrades Mitin, Kondratenko and Kemezh, directors in the Lines Main Administration, have resigned themselves to the fact that the switch plants are not delivering the required number of switches. The reconstruction of the Murom, Dnepropetrovsk and Novosibirsk plants, which is being done by Ministry of Transport Construction organizations, has been dragged out intolerably.

The failure of Ministry of Ferrous Metallurgy plants to deliver 140,000 tons of rails is having an effect on the condition of the track — and this at a time when there is a very great need for them.

The ministry and press organs continue to receive numerous complaints about the low quality of passenger services, train delays, and difficulties in acquiring tickets, especially during the summer.

Last year, the level of fulfillment of the train movement schedule was reduced by four percent. In general, it was only 92 percent. The situation on the Volga, Transcaucasian, Kemerovo, North Caucasus, West Siberian, Transbaykal, Sverdlovsk, and Moldavian railroads was the most unfavorable. The chiefs of these railroads — Comrades Chebotarev, Valkov, Nikolayev, Dovgyallo, Skvortsov, Kotlyarenko, and Gerasimov — have reconciled themselves to the shortcomings and are displaying intolerable inertness in this very important matter.

The ministry's central commission for train movement schedules and the commissions on the railroad are working poorly. Comrades Sidenko and Chernyugov, directors of the Railway Traffic Main Administration; Comrade Torba, director of the Passenger Main Administration; Comrade Mitin, director of the Lines Main Administration; and other members of the central commission are conducting matters formally and not displaying the required exactness.

The newly created cost accounting subunits — the boards for passenger services — are developing poorly their work to strengthen facilities and expand services. Several railroad directors, especially those of the Odessa, Southwestern, Donets, and Transcaucasian, are underestimating their role and not contributing to their very rapid establishment. The Railroad Restaurants Main Administration (Comrades Khvesin and Pivovarov) is setting its work right extremely slowly. There are still many passenger complaints about the low standards of retail services, violations of trade rules — raising prices, cheating and falsifying weights. The income of public catering enterprises is low. A large number of rail terminal restaurants and dining cars are operating at a loss.

The large shortage of passenger cars is having an extremely negative effect. During 1987, 169 railcars fewer than the planned amount were delivered — at a time when there was a significant increase in passenger traffic. During the present year, it is planned to reduce deliveries vis-a-vis the targets. This problem is a very acute one and it is necessary to achieve its solution in a very persistent way.

The situation concerning train traffic safety is completely intolerable. Last year, passenger train wrecks with very serious consequences at the station of Kamenskaya on the Southeastern Railroad and on the Transcaucasian Railroad and other wrecks and accidents were allowed.

Transport is suffering a defeat primarily because of errors in working with people and because of the poor organization of their indoctrination and training. Unfortunately, there are still workers who reduce to nothing the results of the labor of entire collectives and who stain the entire branch by their irresponsibility and, at times, criminally negligent attitude toward their work.

The number of inhibiting signals is not being reduced. The situation at crossings is not favorable. Wrecks, accidents and incidents of waste are occurring as a result of violations of the technology and rules for maintaining and repairing technical assets.

Sluggishness is being displayed in incorporating the technical assets that increase movement safety; the mechanization and automation of production processes is being carried out poorly; and many commanders are treating the introduction of progressive experience passively.

The numerous violations of locomotive crew work and rest conditions are creating a threat to traffic safety. The situation did not improve during the past year. Even an increase in violations was tolerated on a number of railroads, especially the North Caucasus, Volga, South-eastern, Southern, and Transcaucasian.

Many correct decisions, aimed at improving traffic safety, have been adopted. The inspection staff has been strengthened. However, we have not managed to overcome formalism, irresponsibility and the underestimation of the human factor. It is impossible to guaranteed accident-free work without this, without the support of the labor collectives and without their involvement in active creativity.

Many proposals are now arriving in the Ministry of Railways addressed to the minister and directors of railways and divisions. Each of them is examined carefully and everything that is valuable is accepted for practical implementation.

Without a doubt, the errors in working with people are having a negative effect on traffic safety. Casual people, who are not psychologically prepared for this responsible work, often find themselves in the critical position near a locomotive controller or near a dispatcher's panel. Sometimes, they even entrust a responsible task to workers who do not inspire trust — despite the opinion of the collective. This is motivated by the shortage of personnel. Most frequently, accidents occur through the fault of these people.

However, how are the work and rest of locomotive engineers and workers in other leading professions organized in many places? It was pointed out during the meeting that the trade union organizations on the railroads and the trade union's Central Committee should be more active in intervening in the establishment of normal work and rest conditions, especially those of

workers directly connected with the movement of trains, and that they should display concern that rail workers be supplied with high quality and comfortable special clothing. Indifference towards the needs of people is intolerable.

Transport hub party committees should take an active position in everything that is connected with the human factor. There are now more than 400 of them on the railroads. These large party organizations are obliged to be in the vanguard, to set the tone in indoctrinational work, and to instill in each worker a high sense of responsibility for the task entrusted and for traffic safety.

The reliability of rail worker cadres and the prestige of the transport professions depend a great deal on how social questions are solved. Although there are positive changes for the better in this important matter, there are still many serious shortcomings and unsolved questions also. In particular, the plans for commissioning housing have not been fulfilled on the Gorkiy, Sverdlovsk, Odessa, and West Siberian railroads. The construction of sales and public dining enterprises is being carried out unsatisfactorily on a number of railroads.

Although 118 million rubles of various goods more than in the previous year were sold last year to railroad workers, including a six-seven percent increase in animal husbandry products, the majority of worker supply departments did not fulfill the plans for commodity turnover. You see, a real requirement by a rail worker for this or that industrial item or product stands behind each ruble of commodity turnover. The working conditions of trade, public dining and consumer services enterprises are still far from being convenient for workers everywhere.

Although subsidiary farms have increased the sale of meat and milk, their expansion is still taking place slowly. Matters are extremely unsatisfactory in this regard on the Transcaucasian, Azerbaijan, Baltic, Kemerovo, Sverdlovsk, Kuybyshev, and several other railroads.

Shortcomings in the medical services of the rail workers are being eliminated slowly and health care establishments are being expanded at poor tempos.

The Ministry of Railways Collegium and the trade union's Central Committee Prezidium have required that decisive steps be taken to correct the situation in the social area and to display maximum concern for the railroad workers.

Cost Accounting Levers

Under the conditions of full cost accounting and self-financing, special significance is being attached to the firmness of the financial situation. Its instability can

have negative consequences of not only an economic but also of a social nature. A situation is possible where there will not even be any assets for pay.

Despite the fact that the branch has received hundreds of millions of above-plan profit during recent years, many railroads and enterprises are in a difficult financial situation. The shortage of their own working capital is now 395 million rubles; only half of them are covered by a Gosbank credit. It is necessary to search energetically for internal resources to eliminate the deficit that has been formed.

A shortage of assets is also being felt in the financing of major repairs for fixed capital. During 1987, the railroads failed to finance capital repair work valued at 250 million rubles. At the same time, these assets were expended uneconomically on many railroads, in particular on the Azerbaijan, Transcaucasian, Northern, Baykal-Amur, and several other railroads.

The railroads and enterprises of the branch must constantly attract bank credits in a significant amount in order to insure their solvency. Debts to the bank reached approximately 2.2 billion rubles at the end of last year.

In connection with the introduction of the new credit procedure and stricter control, banks have a right to demand the repayment of approximately 500 million rubles of credit. The South Urals Railroad must return 48 million rubles to the bank; the Moscow — 45 million; the Far Eastern — 43 million; etc. It will not be simple to pay off these debts.

In accordance with the Law on a State Enterprise, a calendar sequence for payments has been introduced in order to strengthen financial discipline. Previously, enterprises had the right to reserve assets for paying wages in an account in the bank. They paid other accounts only after providing assets for wages.

With the introduction of the calendar sequence, all payments are settled as they are presented regardless of whether or not money has been received for wages. This procedure requires a steady availability of financial assets in the accounts in the bank. The absence of assets for payment will place enterprises, divisions and the railroad, in general, in an insolvent position.

Considering the complexities of the transition period, it is permitted to issue credits for the payment of wages to enterprises in financial difficulties up to 1 July 1988. This, however, is a temporary measure. In order to avoid being in a serious situation, the railroad and enterprise directors must introduce order into finances immediately.

Today, 336 transport enterprises and organizations (this is approximately six percent of their total number) are failing to meet ends meet and have losses amounting to 264 million rubles instead of profits.

All of this primarily results from the unskillful direction of economic activity — the failure to fulfill the assigned amounts of work, large unproductive expenditures, fines and — in general — the display of bad management. There are also costs caused by the existing cost accounting system in enterprises and the distribution of profit — costs to which we have reconciled ourselves for a long time. On 1 January, a better improved procedure for distributing income from shipments was introduced.

Under the conditions of complete cost accounting where profit has become the main source for production and social development, all enterprises are obliged to work profitably. Unprofitable operations simply cannot exist. It is necessary to plan accurately and clearly.

In October of last year, the ministry developed a program for the financial normalization of the branch during the period out to the end of the five-year plan. The railroad and enterprise directors were instructed to examine in detail the reasons for the unprofitability of enterprises and to determine specifically how they could be brought out of this situation. However, this program was not accepted by everyone as a document of extraordinary importance. It was necessary for Comrades Pryadko and Nikitin, the directors of the economic administrations, and the directors of Ministry of Railways branch administrations to take the implementation of the measures, which had been provided for by this program, under their unremitting control and to provide the required help to the railroads and enterprises in insuring the profitability of their work.

It is important that each director and each member of a labor collective constantly ask himself whether he has done everything for the economic well-being of his enterprise and of the branch, in general, for the improving of profitability and for the reduction of expenditures?

For 1988, the control number for profit from all types of rail transport activity has been set at 5.3 billion rubles. It is necessary to make payments for producer goods and deductions from profit of 2.8 billion rubles to the state budget. A total of 2.5 billion rubles will remain for the needs of the branch — the expansion of production, science and technology; the solution of social tasks; and material incentives for the railroad workers. In order to expand these capabilities, the ministry has assigned the task of obtaining no less than 300 million rubles of above-plan profit during 1988.

First of all, it is necessary to realize the quota for freight and passenger traffic volumes. This will provide 19.3 billion rubles of income.

Special attention must be paid to observing the established freight product list. Last year, more than 150 million rubles of income was lost because of errors in this matter.

The new economic mechanism grants broad rights and capabilities for earning assets not only from the main production activity but also from the providing of different services to other enterprises and the population and from the expansion of consumer goods production and sales. It is necessary to use this source of additional income and profit to the maximum extent possible.

For example, why cannot the track machine stations (many of them unprofitable) correct their financial affairs when performing repairs on the sidings of industrial enterprises? Many depots have the capability of expanding the volume of rolling stock repair for industry. Will the mechanized divisions for loading and unloading operations not find an opportunity to use their equipment for providing services to clients?

During periods when passenger traffic slows down, they have begun to use idle railroad cars as hotels in the Moscow terminals. During three months alone, these hotels on wheels have provided 370,000 rubles of profit. It is planned to obtain approximately 1.5 million rubles from this service during the present year. The people are happy and the profit is substantial. This is how it is necessary to manage. Of course, the search for sources of additional profit must not take place to the detriment of the real responsibilities of transport enterprise and sub-unit collectives.

The radical management reform must tear down the expenditure mechanism. It is aimed at very strict conditions for savings and at the widespread introduction of resource-savings technology. Savings will become the main source for covering shortages in resources.

The atomizing of material resources and thoughtless accumulation are completely intolerable now. Last year, the availability of cement exceeded the established norm 1.5-3-fold in the warehouses of the Northern, Transbaykal, Moscow, South Urals, and Far Eastern railroads; 2.5-fold on the Dnepr railroad; and threefold on the Donetsk. At the same time, the construction organizations of many railroads were experiencing a constant hunger for cement. Several plants engaged in producing reinforced concrete items, including the Znamenskiy, Osnovyanskiy, Vereshchaginskiy, Dzhambulskiy, and Kazatinskiy, were even idle for this reason.

Free expenditure norms for repairing rolling stock and various assets, including ferrous metal, pipes and several other materials and items, do not contribute to savings conditions.

Enormous stocks of uninstalled equipment, which require assembly, valued at more than 140 million rubles have taken shape on the railroads, in repair plants, on subways, and in other enterprises. Now, such a situation will turn into losses of funds with all of the consequences that flow from this.

Improve Management Style

The new General Scheme for Managing Railroad Transport provides for combining economic management methods and advanced organizational structures, for shifting to a dual-link management system, and for integrally combining centralized direction with the democratization of management and with an increase in the independence of labor collectives.

In order to concentrate the functions of management, increase efficiency and eliminate duplication and the cheapening of the apparatus, a number of the ministry's main administrations, administrations and departments have been combined. The total number of independent structural subunits has been reduced from 39 to 29 and that of the subunits in the main administrations and administrations to 84. Work is being performed to reduce the number of staff workers (excluding dispatchers) by 40 percent.

Critical tasks have been assigned to the Shipments Main Administration that was formed on the base of the Railway Traffic Main Administration. Under the new management conditions, it must organize the fulfillment of shipping plans more skillfully and efficiently, distribute railcars to the network's regions, and see to the fulfillment of the formation plan, train movement schedule, and norms for using rolling stock. Special attention must be paid to increasing the effectiveness in directing operational work using an automated dispatch control center on the network's avenues.

At the same time, dispatcher direction is being strengthened in the main administrations — Locomotives, Railcars, Lines, and several others that are directly connected with providing shipments.

The role of the Scientific and Technical Main Administration in the development and implementation of important programs aimed at solving priority scientific and technical progress tasks in the branch, is being improved.

The functions of the Economics Main Administration, whose composition includes the Labor and Wages Administration and the Shipment Planning Administration of the Railway Traffic Main Administration, have been considerably expanded. The new main administration has been called upon to raise planning and all of the economic activity in transport to a higher level.

An especially critical task has been placed on the Centralized Accounting and Bookkeeping Main Administration — the strengthening of the branch's financial position, concern for introducing complete cost accounting and self-financing, and the observance of state financial and accounting discipline.

The Designing and Capital Construction Main Administration has been created on the basis of the following main administrations — Capital Construction and Design of Railroad Transport Facilities, and the following administrations — Examination of Designs and Estimates and Civil Structures and Water Supply.

The directors of the newly created Signals, Communications and Computer Equipment Main Administration have now been called upon to provide for the effective and integrated use of the technical equipment in these areas and to accelerate the introduction of automated control systems and technological processes in a decisive manner.

The new Traffic Safety Main Administration, where all the inspectors from the staff of the Traffic Safety Main Inspectorate and from the branch main administrations are now concentrated, must set the tone in organizing accident-free operations.

The Personnel and Educational Institutions Main Administration has been organized on the basis of the two main administrations.

A great deal now remains to be done to improve the organizational structure of the administrations and divisions of the railroads. When doing this, it is necessary to be primarily guided by the Law on a State Enterprise (Association). In compliance with the law, the railroads will operate based on the regulations concerning a state production association, whose composition includes the railroad divisions; industrial and construction organizations; and educational, health, etc., institutions. The independence of the mainlines in the management and adoption of decrees is being raised, and their rights and responsibilities are growing. The railroads themselves can now select and establish their management structure.

Of course, the new structures have still not been properly tested. That is why the speakers pointed out that it will be necessary to firm up and finish a great deal during the mastery of the new management methods. Considering the specific nature of transport, it is necessary, on the one hand, to centralize management because transport is extraterritorial and, on the other hand, to democratize and increase the independence of labor collectives.

However, this second trend is still being extinguished, at times, in various types of agreements and, so to speak, in voluntary and compulsory recommendations.

It was pointed out during the session that this means that the railroads themselves must search and test. There already exist positive examples. A cooperation and specialization program is being implemented on the Moscow and Belorussian railroads; joint centers for metal working and the manufacturing of spare parts, and joint track, signal and communications divisions are being created in transport hubs.

Life convincingly demonstrates the advisability of strengthening railroad divisions. Under the new management conditions, this will permit one to cope more persistently with the growing volume of work and, correspondingly, to obtain more income and profit.

It is necessary to change work style and methods more energetically, to stop red tape and bureaucratism, and to limit as much as possible the number and duration of various types of selective and other meetings and sessions.

Those, who spoke during the meeting, pointed out that gross shunts and administrative pressure sometimes still prevail in the mutual relation practices of transport commanders. Far from all economic directors and trade union committees have been inspired by the provisions of the Law on a State Enterprise and by the democratization of management. They are not relying on the councils of labor collectives, whose establishment and formation are being dragged out unjustifiably.

In transport, all of whose subunits are closely interconnected and are links in a single shipping conveyer line, it is extremely important to combine the principles of one-man management and collegiality and centralized management with a significant expansion of the rights and responsibilities of labor collectives in a flexible manner.

Income Items

It is completely clear that rail transport receives its main income from freight and passenger traffic. A control figure of 4.1 million tons has been established in the 1988 plan for the overall dispatch of freight. This is 50 million tons more than in 1987. The approved state order is 2.375 billion tons. The ministry's state order adds 934.4 million tons to it. This totals 3.3094 billion tons or 81.5 percent of the control figure.

In accordance with the state order, it is necessary to transport 777.3 million tons of bituminous coal, 31.8 million tons of coke, 415.8 million tons of petroleum and petroleum products, 263.4 million tons of iron ore and manganese and 164.7 million tons of timber products.

The state order for passenger traffic is 401 billion passenger-kilometers. This is almost 11 billion passenger-kilometers more than for this year according to the five-year plan.

The quotas are very strenuous ones. Their realization will require a great deal of effort from the workers in all rail transport services and subunits. The task is complicated by the fact that the amount of shipments will be practically less than that given by Gosplan according to the plans that have been calculated by the railroad.

themselves. There are, of course, objective reasons which one cannot fail to take into consideration. The directors of a number of railroads, who spoke during the meeting, talked about this.

Old tendencies, however, also appeared — reduce the plan a little, they say, so that it will be easier to live with it. This, however, is a profound delusion. You see, income and profit — and, consequently, all funds — will be reduced with a decrease in work. It is impossible to forget that the railroads receive only 60 percent of their profit from cargo shipments for transporting state order freight, which represents 81.5 percent of their total dispatching. The other 40 percent of income must come from the remaining 18.5 percent of freight in connection with higher tariffs. Consequently, it is necessary to be persistent in searching for opportunities to increase shipments so as to exceed the control figures. Already, it is necessary to ship one billion tons during the first quarter.

Here, it is very important to achieve harmony and close cooperation between the railroads and the freight dispatchers and consignees. The insuring of a steady dispatch of products in complete accordance with delivery plans and the contract obligations of enterprises should become a law for the operation of the railroads and their subunits. In industry, enterprises, which produce approximately 60 percent of all products, have been working since January under the new principles. Each error in the work of transport will cause a chain reaction of disruptions in them. That is why the effectiveness and accuracy in supplying rail cars and containers for loading have acquired an exceptionally important significance.

One of the main reserves is the acceleration of railcar turnover. This indicator has now entered into the state order. Limits, which must be achieved during the present year, have been defined. It is necessary to accelerate railcar turnover by five hours, and by seven hours by 1990. Each hour gained permits — under present conditions and on the scale of the network as a whole — an additional shipment of 25 million tons during the year and the obtaining of 85 million rubles of additional income and 65 million rubles of additional profit. Take the limit outlined in 1988 — this means 3.0 million rubles will be added to profits. Payments for the working pool of railcars — in an amount of up to six percent of their cost — should have an economic effect on accelerating railcar turnover.

Economic levers will now induce an observance of empties disposition discipline. For each railcar not handed over in accordance with the empties disposition list, the material incentive fund is reduced by 150 rubles and by 100 rubles per railcar when the loading norm for the destination railroads is not fulfilled.

As is known, the observance of freight delivery periods is one of the indicators of the quality of transport work. The situation is still far from being favorable. Annually,

fines of up to 100 million rubles are being paid for delays in delivering freight. However, they disturbed few. A system of economic responsibility has now been introduced. The total fines for delays in delivering freight will only be applicable to those roads through whose fault a violation of the prescribed period occurred.

The reform impels one to think in economic categories and — what is the main thing — to act in a corresponding manner. When transport has higher expenses from creating the best conditions for the freight dispatcher and consignee and from reducing their expenditures, it is necessary to use contract prices.

Quite a bit remains to be done to increase the profitability of passenger traffic. It provides 18-20 percent of the branch's total income. During the past year, approximately 140 million rubles of income were additionally received thanks to the overfulfillment of the plan for passenger turnover. Services, which were provided to passengers and which they paid for, brought in approximately 400 million rubles. The task of obtaining 91 million rubles of income above the plan during 1988 has been posed — especially by expanding and improving the quality of services. Here is a broad field for searching for new work forms and for initiative.

Technical Progress

The new economic mechanism is a powerful economic lever for accelerating scientific and technical progress. The shift of scientific, research, and design organizations to complete cost accounting and self-financing must radically change their activity and raise their results and responsibility for the technical level of their works and reduce expenditures and periods for designing new equipment and advanced technologies.

During the last two years, definite work to concentrate scientific forces on the priority avenues in the development of science and technology has been done in the branch, and quite a bit has been done to establish and develop an experiment base. The targets of a number of state and 27 branch scientific and technical programs are being realized. Design technological bureaus have been created on 23 railroads and two subways.

Along with this, there are many substantial shortcomings in the organization of scientific research and work and in the introduction of its results. The branch program for increasing the weight of a freight train is being realized with a substantial lag although there exists positive experience in this work.

On the South Urals Railroad, for example, they have lengthened the station track on the avenue from Kropachev to Isilkul, having concentrated their efforts and assets. A total of 13 million rubles were expended on this. They are being more than compensated. The weight of a train has been increased, and the movement dimensions for 28 pairs of trains have been reduced. The need

for constructing an additional main track costing approximately 700 million rubles fell away. High effectiveness has also been achieved as a result of increasing the weight of a train on the Inskaya-Tayshet avenue.

The indicator for the average weight of a train is included in the state order and it is necessary to increase responsibility for the fulfillment of the program for its increase, to remove barriers, and to make those, who do nothing, strictly responsible.

It is necessary to examine with a high degree of exactingness how other programs on developing and introducing intensive technologies and on increasing the operating reliability of locomotives, railcars, track, and other technical systems are being carried out. It is necessary to incorporate 2.3-fold more items of new equipment and technology and finished scientific work during the year, which has arrived, than during the past one. This must provide an economic effect of approximately 140 million rubles.

It is necessary to complete the establishment of design technological bureaus on the railroads in the shortest possible time. The example of the Belorussian Railroad's design bureau testifies to how effective their activity can be. Here, they developed in a short time the new Minsk dispatcher interlocking system using electronic circuits. It is several-fold cheaper than the existing Neva and Luch dispatcher interlocking systems. They have already equipped one railroad section with it. The design bureau of the West Siberian Railroad in the Khabarovsk Institute and in a number of other places is working productively.

It is difficult to overestimate the role of the branch's main scientific center — the All-Union Scientific Research Institute of Rail Transport — in accelerating scientific and technical progress in transport. Its collective must reorganize its work more rapidly.

Large hopes have been placed on the newly established Soyuzzhedoravtomatizatsiya Scientific Production Association.

It is important to re-examine in a fundamental way the requirements for the technical level and quality of new locomotives, railcars and other equipment and to achieve a sharp reduction in the periods of their manufacturing and delivery. It is impossible to give further rein to industrial enterprises and to pay enormous resources for obsolete and, moreover, insufficiently reliable equipment.

Capital construction must be aimed at the branch's technical progress and the very rapid commissioning of capacities and social projects with minimum expenditures. In 1988 the total volume of capital construction will grow by 336 million rubles or by five percent. The economic reform has considerably expanded the rights and capabilities of the railroads and enterprises in this

matter. Assets, which are earned by the railroad and enterprise collectives themselves, are now the main source for financing re-equipping, reconstruction and social development.

For the branch as a whole, 60 percent of the capital investments, which are earmarked for expanding the material and technical base of the existing network, and 90 percent of those allotted for projects in the social area, are being provided by financing from the funds for the development of production, science and technology and for the social development of the enterprises. Budgetary allocations have been accurately distributed according to new construction projects, and the amounts for commissioning capacities here are a state order.

Under the conditions of the increased independence of enterprises in expending assets, their responsibility for insuring a state approach to the development of the branch's material and technical base is being substantially increased. It is necessary to halt decisively the trends toward localism.

The radical reform of the economy is also closely affecting the organization of economic, scientific and technical cooperation with foreign railroads and firms. Here, a great deal must be done to increase the effectiveness of work and the search for additional sources of currency entries.

During the discussion of the social program during the meeting of the Ministry of Railways Collegium and the trade union's Central Committee Presidium, it was pointed out that the program for commissioning 200,000 apartments during the current five-year plan must be overfulfilled. It is also important to improve the work of public education, worker's supply, and health protection agencies in transport. It is necessary to pay special attention to the building of children's preschool establishments so that the lines will be eliminated during the current five-year plan and all those needing them will be accommodated.

In order to carry out the radical reform of the management mechanism successfully, it is necessary to improve the economic education of the railroad workers radically and to develop in each one the desire and the ability to think and work in the new way. Economic training is still poorly connected with the specific tasks in restructuring the work of enterprise collectives and with the mobilization of railroad workers to fulfill planning quotas and socialist obligations and to make fuller use of production reserves.

Balance Profit Received (including above-plan profit, in billions of rubles)

	5.484	5.5136	5.5646
Total	.3971	.2846	.3
Above-plan profit (intended profit for 1988)			
Plan (Target for 1988)	5.0869	5.229	5.2646
Year	1986	1987	1988

Labor Productivity Growth As a Percentage of 1985

1985	100
1986	107.6
1987	114.9
1988 (goal)	120.6

The speaker — N. S. Konarev, minister of railways — and the others who spoke at the meeting emphasized that the practical realization of the policy, which has been developed by the party for reconstructing the economy, has been begun. A great deal of creative work lies ahead. Many branch progressive collectives, in preparing for the coming 19th All-Union Party Conference, are developing and adopting socialist obligations and are giving their word that they will complete the planning tasks ahead of time and achieve high quality and effectiveness in their work.

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1987 Railroad Performance Data Reviewed
Moscow GUDOK in Russian 20 Jan 88 pp 1-2

[Article from the Materials of the Statistical Administration of the Ministry of Railways: "Raise the Rates, Increase the Efficiency: A Survey of Railroad Transport Operations in 1987"]

[Text] As a result of the persistent, stepped-up labor of the railroad workers and an improvement in operational work, despite the considerable lagging behind permitted in the first quarter, the freight dispatch plan for last year was fulfilled. Positive results were achieved in the current five-year plan for a number of extremely important indicators.

In the past two years of the five-year plan, about 79 million tons of above-plan tons of national economic goods were shipped, including almost 26 million tons of coal and 3 million tons of coke, 14 million tons of petroleum products, over 17 million tons of ferrous and nonferrous ore and many other industrial and agricultural products.

The collectives of the West Kazakhstan, Southwestern, Belorussian, Baykal-Amur, Kemerovo, Tselin and Moldavian railroads were among the first to complete fulfillment of the 1987 plan ahead of schedule.

The goal for passenger turnover in 1987 was overfulfilled by more than 16 billion passenger kilometers, or by 4.25 percent. The increase in passenger turnover in the two years of the five-year plan was 28.3 billion passenger kilometers, or 7.6 percent, with the goal for the entire five-year plan being 7.5 percent.

Last year 300 million rubles of above-plan profit were obtained, and in the past two years of the five-year plan—700 million rubles.

Widescale introduction of the experience of the Belorussian railroad and striving to fulfill the increased shipment volumes with the smallest number of people, on the basis of introducing and efficiently using the achievements of scientific-technical progress, improving the technological processes and raising the degree of organization, discipline and responsibility of each worker, made it possible in 1987 to raise labor productivity by 6.8 percent, and in the two years of the five-year plan—by 14.9 percent, with the goal for the five-year plan being 10-12 percent. At the same time, without additional state funds, it was possible to raise the average wage of railroad workers engaged in transport, on the whole for the network, by 26 rubles. On the Belorussian railroad itself, the wage increase was 45 rubles, on the Moscow—41 rubles, the Central Asian—35, the Lvov—34 and the Alma-Ata—32 rubles.

About 280,000 persons were released at railroad transport enterprises, and of them, 160,000 were sent for employment in other sectors of the country's economy. The experience of the Belorussian railroad workers took on state significance, and was recommended for wide-scale dissemination in the national economy.

In 1987 Soviet railroad transport workers operated under new conditions of economic activity, which increased the independence and responsibility of the enterprises for the end results and created the necessary economic base for the sector's transition, beginning on 1 January 1988, to full cost accounting and self-financing.

Freight transport. Particular attention was paid to on-time delivery of fuel, ore-metallurgical raw material, goods from the machine building complex and food-stuffs. While overfulfilling the assignments for transporting the most important freight, the plan for transport of peat, timber, flux, refractory materials, metal structures, granulated slag and perishables—for 7 out of 18 freight items on the yearly products list—was not realized. In a number of regions of the country and in the transport of other goods, the needs of the enterprises were not fully satisfied.

Irregular freight handling on week-days, and especially on free days and holidays, continued to have an adverse effect on freight operations. Within the year, the opportunity of shipping over 27 million tons was lost because of this.

Of the nine railroads not coping with the plan for freight shipment, the greatest underloading was permitted on the Donetsk—42 million tons, the Kuybyshev—3.8, the Volga—2, and the South Urals and the West Siberian—1.8 million tons each.

The level of shipping and stage routing in 1987 dropped by 1.4 percent and was 42 percent. The reduction took place for all the goods taken into account, with the exception of imports. Only the October (Leningrad), Belorussian, Odessa, Southern, Dnepr, Alma-Ata and Kemerovo railroads maintained or somewhat improved the routing level achieved in 1986.

The static load of a railroad car was increased, as compared with the planned assignment, by 70 kilograms, and as compared with the 1986 level, by 230 kilograms. This made it possible to transport over 17 million tons of freight without drawing in an additional fleet of cars. The static load rose in the transport of most of the mass goods: hard coal—by 1.07 tons, petroleum goods—by 0.71 tons and granulated slags—by 2.09 tons. It dropped in the shipping of timber goods, shales, metal structures, ferrous scrap metal and certain other products. On the Gorkiy, Transcaucasian, Transbaykal and West Siberian roads, the static load dropped particularly noticeably—by 320-1160 kilograms.

Unloading. On a number of railroads with a sizeable excess of local freight, there was a low level of delivering it and unloading the cars. This pertains particularly to the Volga, October (Leningrad), Transcaucasian, Lvov, Baltic, West Siberian and Transbaykal roads.

In the first half of a 24-hour period, only about 29 percent of the cars were unloaded.

Container shipping. The plan was not fulfilled last year. Most of the railroads permitted a reduction in the volume of these transports, and sharply reduced container loading. The situation is analogous with packet transport.

Industrial railroad transport enterprises overfulfilled the transport plan by 4.5 percent. They shipped about 23 million additional tons of freight. The transport volume for the preceding year increased by 6.2 percent, or by 37.3 million tons. The plan for loading-unloading operations was overfulfilled by 1.3 percent. Some 5.1 million additional tons were processed. The volume of loading-unloading operations for 1986 here rose by 1.3 percent, or by 5.2 million tons. Two territorial associations—the Kaliningrad and the Perm—did not cope with the plan for transport, and the Vladimirsks, Volgograd, Novosibirsk and Ukraine associations failed to cope with the volume of loading-unloading operations.

Railroad freight turnover was 3.825 billion scheduled ton-kilometers, which is 0.3 percent more than in 1986.

Passenger transport increased at quite rapid rates. In 1987, about 4.445 million passengers were carried—almost 300 million more than in 1985. A characteristic is the particularly large increase in long-distance passenger transport.

The year's plan for passenger turnover was fulfilled on 17 December, and for the two years of the five-year plan—on 1 December. As a result, about 40 million rubles worth of above-plan revenues was obtained. The volume of services rendered to passengers at stations and on the trains rose by over 4 percent.

All the railroads, with the exception of the Transcaucasian, coped with the year's assignment for passenger turnover. Measures were carried out, and a comprehensive target program of rapid transit was specified on the Moscow-Irkutsk-Tynda, Moscow-Yerevan and other lines.

The railroads, however, are feeling an acute shortage of passenger cars. The relative proportion in the fleet of old-model cars and cars with expired service life is high.

There are still many serious shortcomings in the organization of passenger transport and, above all, violations of the schedule discipline. As compared with 1986, on-schedule dispatch of passenger trains deteriorated by 1.9 percent, for transit—by 4 and for arrival by 5.4 percent.

The country's subways fulfilled the year's transport plan ahead of schedule—on 28 December. Almost 58 million above-plan passengers were carried. The collectives of all the subways coped with delays. The cost of transport was reduced as against the plan by 2.7 percent and labor productivity was 112.5 percent realized.

The goal for introducing new lines was fulfilled. Some 17.4 kilometers of main underground lines were put into operation. Sections in Gorkiy, Leningrad, Tashkent and Moscow were put into operation ahead of schedule. A new subway in Kuybyshev (4.8 kilometers) and a section of the subway in Novosibirsk (1.6 kilometers) began operations.

The quality of railroad operational work is characterized by the following data.

Inter-railroad transfer rose by 2400 cars a day, even though it was 1.8 percent lower than the norm. The movement of car flows was noticeably accelerated on many roads, particularly on the Belorussian, Moscow, Southwestern and Southern, where they coped with the transfer norm. The Azerbaijan, Baykal-Amur, Volga, Donetsk, West Kazakhstan and certain other railroads, however, performed the transfer of laden cars unsatisfactorily when there was a great excess of transit freight.

Car turnover was delayed for five hours. Moreover, idle times increased by over three-fourths as a result. For example, the time for a car undergoing freight operations rose by 1.9 hours, and at dead-end sidings—by 2 hours.

The service speed of freight trains was reduced by 0.5 kilometers an hour, with the greatest amounts on the Baltic, Southern, Donetsk, Transcaucasian, Southeastern, Kemerovo and Transbaykal roads.

The average weight of a train was 3085 tons. The planned assignment was underfulfilled by 55 tons. The increase in the number of underweight and underconsistent trains and a number of other factors had their effect.

On many roads the use of locomotives improved somewhat. The idle times of electric power units were reduced at turn-around points and at home stations, and of diesel locomotives—at home stations. Electric locomotives were engaged in useful operations 10.64 hours a day, and diesels—9.18 hours.

Freight train schedule fulfillment was reduced last year by 1.4 percent for departures and for transit—by 2.7 percent, and were, respectively, 88.8 and 72.6 percent. Traffic on the Baltic, West Kazakhstan, Sverdlovsk, Southeastern, Transcaucasian, Volga, Lvov and Southern roads was poorly organized.

The sector's industrial enterprises coped with the plan in general. The output rose by 85.8 million rubles. The plan for product sale, in consideration of the commitments for deliveries, was 98.8 percent fulfilled. The plan for consumer goods production was overfulfilled by 3 million rubles. Labor productivity

increased by 5.5 percent. The average monthly wage rose by 2.7 percent. The cost of industrial output was reduced, which made it possible to obtain over 16 million rubles saving.

At the same time, a number of plants of the Main Administration for Rolling Stock Repair and Spare Parts Production did not fully provide delivery of repaired rolling stock in accordance with the agreements. The Astrakhan Diesel Locomotive Repair Shop underdelivered 9 diesel locomotive sections, the Voronezh—17 sections, the Baku Car Repair Shop short-supplied 210 freight cars, the Barnaul—247 and the Tselinograd—392.

The situation deteriorated with respect to the regularity of releasing all types of rolling stock from repair, particularly cars for the freight and passenger fleet, almost half of which is repaired in the third ten-day period of the month. In particular, in the last few days of the month, the Tselinograd Car Repair Shop releases from repair 64.5 percent of the freight cars, the Kizyl-Arvat—56.3 and the Ordzhonikidze—53.2 percent. The situation is even worse with respect to passenger car repair. In the third three-day period, the Moscow shop releases 69 percent of the cars, and in the first—only 7.9, the Voronezh, respectively, 62.2 and 9.8, and the Dnepropetrovsk—56.1 and 9.5.

At the shops, the fixed capital specified by the plan for modernization and technical re-equipment is not ensured of being put into operation and the plan for performing paid services to the population is underfulfilled. Only 80 percent of the industrial enterprises fully coped with the contractual commitments. The volume of output not supplied in accordance with the agreements and commitments constituted 30.6 million rubles.

Capital construction. In 1987, 622 kilometers of new railroad lines and 603 kilometers of secondary tracks were put into operation, 1144 kilometers of roads were electrified and 1338 kilometers of lines were equipped with automatic blocking systems. About 2860 kilometers of intercity cable lines were laid.

The plan for construction and installation on the whole (according to preliminary data) was 98.9 percent fulfilled. Some 30.3 million rubles of capital investments were not utilized. The construction organizations of the Ministry of Transport Construction lagged behind in constructing projects on the Odessa, Donetsk, Southeastern, Volga, Kuybyshev, South Urals, Transbaykal and Sverdlovsk roads (72-90 percent of the plan).

The plan for construction and installation work in building the new lines, Kholmogorsk deposit-Urengoy, Urengoy-Yagelnaya and for electrification of the sections, Shimanovskaya-Skovorodino, Tyumen-Nazyvayevskaya, Sennaya-Saratov-Rtishchevo, Morocha-Skovorodino and for a number of other projects was not fully carried out.

The construction organizations of the Ministry of Railways overfulfilled the plan for construction and installation work by 1.1 percent.

About 2 million square meters of total apartment-house area (45,000 apartments) were constructed through state capital investments. This is 6.9 percent above the plan and almost 20 percent more than in 1986.

Four railroads—the Gorkiy, Odessa, Sverdlovsk and West Siberian—did not cope with the plan for putting housing into operation. The North Caucasus and Transcaucasian roads lagged behind in putting hospitals into operation; the Gorkiy and Kemerovo—polyclinics; the Transbaykal and Kemerovo—preschool institutions.

Supplies of rolling stock for transport. Last year's plan was not fully carried out, either by domestic plants or from import. The railroads failed to receive 137 electric locomotives, 71 mainline diesels, about 1400 freight and 197 passenger cars. The Tbilisi Electric Locomotive Construction Plant failed to deliver 40 electric locomotives, and the Novocherkassy—97. The Voroshilovgrad plant broke off deliveries of diesel locomotives. The Ural Car Plant short-supplied gondola cars, the Dneprodzerzhinsk—platforms, and the Zhdanov—tank cars. The Gryaz-Orlov plant did not completely fulfill the plan for container supply.

As the result of the measures taken to reinforce work discipline and make up complete staffs, in the two years of the five-year plan the personnel turnover in railroad transport dropped from 10.1 to 9.6 percent. It was reduced in all the basic services (except tracks and passenger), as well as on 23 roads. At the same time, it rose on the Central Asian, East Siberian, Southwestern and certain other roads.

The number of hours of overtime last year at the basic service enterprises was reduced by 5.5 percent. It is still very high. One cannot help but be alarmed by the fact that the number of hours of idle time, particularly in the locomotive facilities, rose by 21.8 percent. An increase in overtime is permitted on eight roads, and to the greatest extent on the Donetsk, Lvov, Southeastern and Southern. The idle times on these roads have also increased considerably.

Today, when a new stage of restructuring has begun in the country, and when the enterprises of the national economy, manufacturing over 60 percent of the products, are working under the conditions of full cost accounting and self-financing, prompt satisfaction of the demands for transport takes on particular importance. Ensuring stable shipment of goods, in full accordance

with the plans for supply and the contractual obligations of the enterprises, should become the law for operation of the railroads and their subdivisions.

Now, in summing up the year's results, the railroad workers are discovering new reserves and trying to put them into service for the five-year plan, and are expanding socialist competition on a broad scale for a worthy reception for the 19th All-Union Party Conference. To

take, from the first month of the year, a high rate and maintain a precise rhythm for the transport conveyer—this is now the main problem. The pledge of successful, efficient transport operations is foremost in solving it.

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